



**Women's Health Initiative  
2021 Annual Progress Report**

**Data as of: March 6, 2021**

**The data, if any, contained in this report/deliverable are preliminary and may contain unvalidated findings. These data are not intended for public use. Public use of these data could create erroneous conclusions which, if acted upon, could threaten public health or safety.**





**Women's Health Initiative  
2021 Annual Progress Report**

**Data as of: March 6, 2021**

**Prepared by  
WHI Clinical Coordinating Center  
Fred Hutchinson Cancer Research Center**

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# 1. Overview

## 1.0 Background

In the mid-1990s, WHI investigators at 40 Clinical Centers recruited 161,808 women into the program. 68,132 women were randomized into the clinical trial component (CT) and 93,676 were enrolled into the observational study (OS) (Figure 1). During 2004-2005, the original close-out period, 115,407 women consented to five additional years of follow-up, representing 76.9% of the 150,076 participants who were alive in active follow-up at that time. In 2010, participants were offered the opportunity to continue, and 87% of the 107,706 eligible women agreed (n=93,567). Active follow-up, and passive follow-up through administrative data sources, continues unless participants withdraw consent.

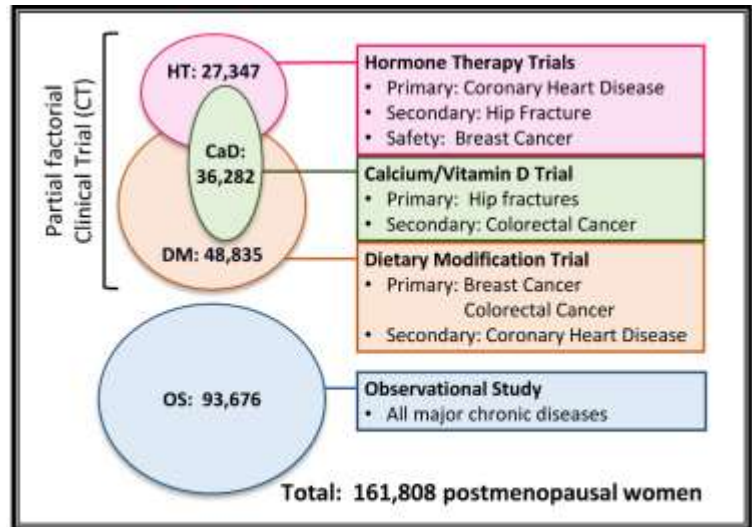


Figure 1. Original design of the WHI clinical trials and observational study, its components and outcomes.

## 1.1 The 2010-2025 Extension Study

The follow-up protocol for 2015-2025 is similar to follow-up starting in 2010. Participants are contacted annually, by mail or email (forms via RedCAP), for health and selected exposure updates. For reports of designated health events, we obtain medical records documentation for a subset. Cardiovascular events and hip fractures are documented only in the subset of participants referred to as the Medical Records Cohort (MRC), comprising all former hormone trial (HT) participants and all non-Hispanic Black/African American and Hispanic/Latina participants regardless of their previous enrollment status (Figure 2). Active

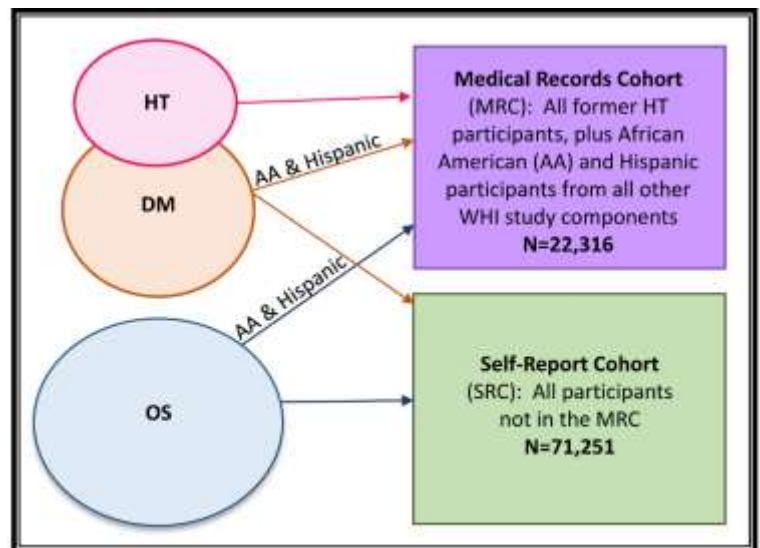


Figure 2. 2010–2025 Extension Study design reflecting differing levels of outcomes ascertainment: MRC and SRC.

outcome data collection for the remaining participants (the Self-Report Cohort or SRC) is primarily limited to self-report. However, NCI supports documentation and coding of incident primary cancers, and NINDS is supporting documentation of incident stroke events. In addition, several active ancillary studies augment the endpoints documentation, and passive follow-up is available through linkage to Medicare, including HMO covered (part C) participants starting in 2015 and the National Death Index. Both of these sources are queried annually and we continue to work with NAACCR to develop an efficient link with the national Virtual Pooled Registry for cancer cases.

The Clinical Coordinating Center (CCC) conducts annual mailings of follow-up questionnaires to all eligible participants. The Regional Centers (RC) and their collaborating centers contact non-responders, collect and submit medical records for all of the designated outcomes to the CCC, and participate in a range of scientific endeavors. The CCC fulfills the RC role for three former Field Centers (Seattle, LaJolla, and Gainesville).

As of March 6, 2021, 59,107 women remain in active follow-up (Table 1.4), 21% of whom are 90 or older. Table 1.5 shows how characteristics of currently active participants compare to those originally recruited. As the size of the cohort decreases, the infrastructure has been reconfigured to maximize efficiency. Participants are now being followed by four RCs and one satellite (Boston). Gainesville participants are now followed by the CCC and those from Tucson are followed by the Stanford RC.

## 1.2 Progress on Primary Study Objectives

Follow-up rates through March 2021 have remained strong, although there has been gradual decline. The response to mailings after two attempts was 81.5% for 2019. Participant age and health are both factors in this gradual decline and we assume that the COVID-19 pandemic and many of the restrictions imposed on our participants led to a lesser response in 2020. WHI administered detailed questionnaires and received a high response. This has contributed to the WHI program's ability to study how the pandemic has affected women in an age-range that has been overwhelmingly impacted by the pandemic.

WHI investigators have been interested in providing better information on race/ethnicity in support of studies of health disparities. Information from the baseline questionnaire (Form 2, administered in 1993-1998) has been used to supplement the more detailed Form 41 questionnaire (administered in 2003) to create an imputed race/ethnicity (Table 1.8). This new coding system preserves more detail of a woman's self-report as available.

For the designated WHI outcomes, annualized clinical event rates based on fully adjudicated outcomes through March 6, 2021 are presented by original study component, age and race (Sections 2-4). We present data for the MRC and SRC Supercohorts, including data for women from these subgroups from the beginning of WHI. Fully adjudicated events available through March 6, 2021 are provided for the MRC Supercohort. For the SRC Supercohort, fully adjudicated events are provided for the interval from enrollment to September 2010 or March 2021 as appropriate.

Nearly a third of the cohort enrolled in the extension studies is deceased (Table 2.1). Unfortunately at this point, the annualized death rate within the cohort is 5.5%. The women in the cohort are an average age of 84.8 years. It is critical to continue to do research within this cohort to examine the health and quality of life issues in this very understudied age group.

Section 5 provides a current summary of the agreement rates between self-reported events and centrally adjudicated events among MRC participants. In general, 50% to 70% of self-reported cardiovascular outcomes are confirmed as the reported diagnosis (Table 5.1). Often, however, a related diagnosis is found. For example, of the confirmed clinical myocardial infarctions, only 52% were based on a self-report of that condition, and the remainder were discovered when investigating a self-report of a different outcome (Table 5.3). Similarly, only 54% of confirmed heart failure cases were found based on a self-report of that condition (Table 5.2). In contrast, the vast majority of self-reported cancer types are confirmed (Table 5.3).

The WHI Long Life Study (LLS) enrolled 7,875 women in the MRC, and collected a blood sample and physical frailty measures. The LLS visit will be repeated in surviving members in 2022-2023. Of the participants who were in the LLS, 65% (n=5122) continue to be actively followed (Table 6.2). Verified



and self-reported outcomes occurring after the LLS visit are presented by age at LLS study visit (Table 6.3) and race (Table 6.4). So far, 1170 LLS participants have had verified cardiovascular outcomes, 681 have had a verified cancer, and 2,252 have died after the LLS visit. The most frequent self-reported outcomes after the visit are: macular degeneration (N=1168), dementia (N=1116), osteoarthritis (N=903) and COPD (N=793) (Table 6.5).

In 2021, WHI began adjudicating strokes in the SRC cohort. NINDS funded efforts to expand stroke adjudication to the end of being able to have a rich resource for examining the role between cognition and stroke. We have started investigations of both retrospective (back to strokes reported in 2010) and current reports. These are scientifically important events to document, though we expect this will change our approach to event rates in the overall cohort. As these adjudications have only been underway recently, these strokes are not included in this year's report, however they will be next year.

### **1.3 Engaging Investigators to Continue to Enhance WHI's Contributions to Science**

The WHI program leadership recognizes the importance of drawing in new investigators to use the rich WHI resources, and also providing leadership and growth opportunities. The WHI Scientific Interest Groups (SIGs) are an active opportunity to provide an entryway into understanding WHI resources and proposing ancillary studies and manuscripts. These efforts have yielded several new initiatives.

Section 8 addresses manuscripts published in the last year. A full listing and status of all proposed ancillary studies and manuscripts is available on the WHI website ([www.whi.org](http://www.whi.org)). In total, 3,863 manuscript proposals have been approved and 2,089 manuscripts published or in press (Table 8.1), including 110 publications since last year's report. Investigators using WHI data continue to present high-quality science of broad interest, with publications in the last year in many high-impact journals such as *JAMA*, *American Journal of Epidemiology*, *Cancer* and *Circulation*. In addition to manuscripts addressing cardiovascular disease and cancer among WHI participants, a substantial number examine diabetes, genetics, and aging. WHI also participates in a number of consortia, reflecting the collaborative nature of the WHI investigators and the value of WHI data, particularly for rarer exposures and outcomes.

The cohort serves as the backbone for ancillary studies. The COcoa Supplement and Multivitamin Outcomes Study (COSMOS) trial (PIs: JoAnn Manson and Howard Sesso), the WHI Strong and Healthy (WHISH) trial (PIs: Marcia Stefanick, Charles Kooperberg, Andrea LaCroix), and many related ancillary trials exploring cognition, eye health, cardiovascular conditions, and more related to the benefits of the interventions are ongoing. The COSMOS trial (PIs: JoAnn Manson, Howard Sesso, Garnet Anderson) will be presenting results the Fall of 2021 at both the AHA conference and in multiple peer-reviewed manuscripts.

We anticipate supporting the Long Life Study 2 in the coming year. Several ancillary studies, including the WHISH trial and the LILAC cancer survivorship cohort will leverage the in-person visits to advance aims of those projects. Additional projects, proposed primarily by young investigators, plan to use the in-person visit to collect data, biospecimens, or use the data collection point as an anchor for independent data collection to tie to the functional measures collected by the LLS.

Genetic data are available in dbGaP for over 30,000 WHI participants using a number of approaches, including our participation in the TOPMed program that can be linked to CVD biomarker data, providing an opportunity for outside investigators to use these resources independent of the WHI program. WHI data, including cancer survivorship data, has been submitted to the NHLBI's BIOLINCC data repository.

The CCC, with assistance from the RCs, developed and implemented a survey of all WHI participants in the summer of 2020, designed to assess the impact of the COVID-19 pandemic and the associated prevention measures on their health and well-being. In total, 64,185 participants were contacted and 50,273 (78.3%) responded (Table 9.1). At the time of the survey, 18.9% reported being tested for COVID-19 and 311 reported having a positive test. Analyses of these data are being prioritized for publication, with a Journal of Gerontology supplemental issue to include the manuscripts. A subsequent survey is in progress, thanks to a collaborative effort of the Regional Centers and the CCC to send surveys to all participants who completed the first survey related to their experience during the COVID-19 pandemic.

The May 2020 celebratory WHI Investigator Meeting was not held in person. Instead a series of webinars were held over an 8 week period, allowing investigators to be updated and to engage on multiple study topics according to their interest. We look forward to meeting again in person in 2022.

**Table 1.1**  
**WHI Centers and Principal Investigators**

**Clinical Coordinating Center**

<b>Principal Investigator</b>	<b>Institution</b>	<b>Location</b>
Garnet Anderson, PhD	Fred Hutchinson Cancer Research Center	Seattle, WA

**Field Centers**

<b>Principal Investigator</b>	<b>Institution</b>	<b>Location</b>
Rebecca Jackson, MD	Ohio State University	Columbus, OH
Mara Vitolins, DrPH	Wake Forest University	Winston-Salem/Greensboro, NC
Marcia Stefanick, PhD	Stanford University	Palo Alto, CA
Jean Wactawski-Wende, PhD	University at Buffalo	Buffalo, NY

**Associated Centers**

<b>Principal Investigator</b>	<b>Institution</b>	<b>Location</b>
Marian Limacher, MD	University of Florida	Gainesville, FL (FC closed Apr 2019)
JoAnn Manson, MD DrPH	Brigham and Women's Hospital	Boston, MA
Cynthia Thomson, PhD RD	University of Arizona	Tucson, AZ (Satellite closed Oct 2020)
Jennifer Robinson, MD MPH	University of Iowa	Iowa City/ Bettendorf, IA (FC closed Feb 2020)

**Current WHI Committee Chairs**

<b>Investigator</b>	<b>Institution</b>	<b>Committee</b>
Marian Neuhouser, PhD	Fred Hutchinson Cancer Research Center	Ancillary Studies (ASC)
Marian Limacher, MD	University of Florida	Outcomes Adjudications (OAC)
Charles Kooperberg, PhD	Fred Hutchinson Cancer Research Center	Performance Monitoring (PMC)
Cynthia Thomson, PhD RD	University of Arizona	Publications and Presentations (P&P)
Linda Van Horn, PhD RD	Northwestern University	Publications and Presentations (P&P)
Rebecca Jackson, MD	Ohio State University	Scientific Resources Working Group
Sally Shumaker, PhD	Wake Forest University	Steering Committee (SC)

**Table 1.2**  
**Consent Status by Study Component and Arm**

Data as of: March 6, 2021

	<b>Enrolled in WHI</b>	<b>Eligible for Extension 2005-2010<sup>1</sup></b>	<b>Consented</b>	
			<b>N</b>	<b>%</b>
<b>WHI Enrollment</b>				
Hormone Therapy	27347	25194	20433	81.1
With Uterus	16608	15408	12788	83.0
E+P	8506	7878	6545	83.1
Placebo	8102	7530	6243	82.9
Without Uterus	10739	9786	7645	78.1
E-alone	5310	4851	3778	77.9
Placebo	5429	4935	3867	78.4
Dietary Modification	48835	45560	37858	83.1
Intervention	19541	18207	14769	81.1
Comparison	29294	27353	23089	84.4
Calcium and Vitamin D	36282	34447	29862	86.7
Active	18176	17280	15025	87.0
Placebo	18106	17167	14837	86.4
Clinical Trial Total	68132	63332	52176	82.4
Observational Study	93676	86744	63231	72.9
Total	161808	150076	115407	76.9

	<b>Enrolled in Extension 2005-2010</b>	<b>Eligible for Extension 2010-2025<sup>1</sup></b>	<b>Consented</b>	
			<b>N</b>	<b>%</b>
<b>WHI Enrollment</b>				
Hormone Therapy	20433	18794	15584	82.9
With Uterus	12788	11789	9891	83.9
E+P	6545	6048	5047	83.4
Placebo	6243	5741	4844	84.4
Without Uterus	7645	7005	5693	81.3
E-alone	3778	3479	2834	81.5
Placebo	3867	3526	2859	81.1
Dietary Modification	37858	35594	30690	86.2
Intervention	14769	13922	12014	86.3
Comparison	23089	21672	18676	86.2
Calcium and Vitamin D	29862	27975	24231	86.6
Active	15025	14083	12242	86.9
Placebo	14837	13892	11989	86.3
Clinical Trial Total	52176	48697	41499	85.2
Observational Study	63231	59009	52068	88.2
Total	115407	107706	93567	86.9

<sup>1</sup> Eligibility defined as alive at the beginning of consent and willing to be contacted.

**Table 1.3**  
**Consent Status by Age at Enrollment and Race/Ethnicity<sup>1</sup>**

Data as of: March 6, 2021

	Clinical Trial				Observational Study			
	Enrolled in WHI	Eligible for Extension 2005-2010 <sup>2</sup>	Consented		Enrolled in WHI	Eligible for Extension 2005-2010 <sup>2</sup>	Consented	
			N	%			N	%
<b>WHI Enrollment</b>								
<b>Total</b>	68132	63332	52176	82.4	93676	86744	63231	72.9
Age								
50-54	9188	8754	7237	82.7	12381	11969	8996	76.9
55-59	14661	13940	11724	84.1	17329	16565	12732	74.2
60-69	31389	29290	24528	83.7	41200	38502	28582	65.6
70-79	12894	11348	8687	76.6	22766	19708	12921	72.9
Race/Ethnicity <sup>1</sup>								
American Indian/ Alaska Native	292	260	185	71.2	421	372	217	58.3
Asian/Pacific Islander	1519	1414	1105	78.1	2671	2444	1291	52.8
Non-Hispanic Black/ African American	6983	6423	4769	74.2	7635	6868	3585	52.2
Hispanic/Latina	2875	2686	1791	66.7	3609	3333	1598	47.9
Non-Hispanic White	55525	51682	43680	84.5	78016	72504	55767	76.9
Unknown	938	867	646	74.5	1324	1223	773	63.2

	Clinical Trial				Observational Study			
	Enrolled in Extension 2005-2010	Eligible for Extension 2010-2025 <sup>2</sup>	Consented		Enrolled in Extension 2005-2010	Eligible for Extension 2010-2025 <sup>2</sup>	Consented	
			N	%			N	%
<b>WHI Enrollment</b>								
<b>Total</b>	52176	48697	41499	85.2	63231	59009	52068	88.2
Age								
50-54	7237	7068	6249	88.4	8996	8802	8225	93.4
55-59	11724	11329	10055	88.8	12732	12400	11481	92.6
60-69	24528	22940	19642	85.6	28582	26820	23716	88.4
70-79	8687	7360	5553	75.4	12921	10987	8646	78.7
Race/Ethnicity <sup>1</sup>								
American Indian/ Alaska Native	185	174	147	84.5	217	204	171	83.8
Asian/Pacific Islander	1105	1050	845	80.5	1291	1224	1035	84.6
Non-Hispanic Black/ African American	4769	4459	3420	76.7	3585	3358	2716	80.9
Hispanic/Latina	1791	1701	1226	72.1	1598	1527	1246	81.6
Non-Hispanic White	43680	40704	35363	86.9	55767	51969	46296	89.1
Unknown	646	609	498	81.8	773	727	604	83.1

<sup>1</sup> Race/ethnicity as identified on Form 2 at baseline.<sup>2</sup> Eligibility defined as alive at the beginning of consent and willing to be contacted.

**Table 1.4**  
**Counts of Participants with Active<sup>1</sup> Participation by Current Age<sup>2</sup>, Race/Ethnicity and Cohort**  
 Data as of: March 6, 2021

	Clinical Trial (N=26,395)		Observational Study (N=32,712)		MRC Cohort <sup>3</sup> (N=13,649)		SRC Cohort <sup>4</sup> (N=45,458)		Total (N=59,107)	
	N	%	N	%	N	%	N	%	N	%
<b>Age on 3/06/2021</b>										
<75	124	0.5	416	1.3	183	1.3	357	0.8	540	0.9
75-79	5148	19.5	6987	21.4	2990	21.9	9145	20.1	12135	20.5
80-84	8620	32.7	10007	30.6	4273	31.3	14354	31.6	18627	31.5
85-89	7178	27.2	8250	25.2	3458	25.3	11970	26.3	15428	26.1
90-94	4093	15.5	5279	16.1	2069	15.2	7303	16.1	9372	15.9
95+	1232	4.7	1773	5.4	676	5.0	2329	5.1	3005	5.1
<b>Ethnicity<sup>5</sup></b>										
Not Hispanic/Latina	25322	95.9	31602	96.6	11900	87.2	45024	99.0	56924	96.3
Hispanic/Latina	1025	3.9	1032	3.2	1739	12.7	318	0.7	2057	3.5
Other/Not Reported	48	0.2	78	0.2	10	0.1	116	0.3	126	0.2
<b>Race<sup>5</sup></b>										
American Indian/Alaska Native	59	0.2	72	0.2	42	0.3	89	0.2	131	0.2
Asian	589	2.2	700	2.1	151	1.1	1138	2.5	1289	2.2
Native Hawaiian/Other Pacific Islander	30	0.1	17	0.1	19	0.1	28	0.1	47	0.1
Black/African American	2117	8.0	1701	5.2	3767	27.6	51	0.1	3818	6.5
White	22953	87.0	29552	90.3	8955	65.6	43550	95.8	52505	88.8
More than one Race	398	1.5	335	1.0	257	1.9	476	1.0	733	1.2
Other/Not Reported	249	0.9	335	1.0	458	3.4	126	0.3	584	1.0

<sup>1</sup> Active participation is defined as current (Form 33 within last 15 months) or recent (Form 33 between 15 and 24 months ago) follow-up.

<sup>2</sup> Age on March 06, 2021.

<sup>3</sup> The MRC Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS who consented to WHI Extension Study 2010-2025.

<sup>4</sup> The SRC Cohort includes all Non-Hispanic White, American Indian/Alaskan Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study who consented to WHI Extension Study 2010-2025.

<sup>5</sup> Ethnicity and race are presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

**Table 1.4 (continued)**  
**Current Age<sup>1</sup> Distribution by Race/Ethnicity for Active<sup>2</sup> WHI Extension Study 2010-2025 Participants**

Data as of: March 6, 2021

	Total (N = 59,107)		American Indian/ Alaska Native (N = 115)		Asian or Native Hawaiian/ Other Pacific Islander <sup>3</sup> (N = 1,308)		Hispanic/Latina (N = 2,057)		Non-Hispanic Black/African American (N = 3,777)		Non-Hispanic White (N = 51,041)		More than one Race (N = 649)		Other/Not Reported (N = 160)	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<b>Age on March 6, 2021</b>																
<75	540	0.9	2	1.7	26	2.0	66	3.2	94	2.5	336	0.7	12	1.8	4	2.5
75-79	12135	20.5	35	30.4	333	25.5	595	28.9	986	26.1	9984	19.6	165	25.4	37	23.1
80-84	18627	31.5	39	33.9	381	29.1	651	31.6	1227	32.5	16083	31.5	198	30.5	48	30.0
85-89	15428	26.1	23	20.0	313	23.9	441	21.4	903	23.9	13532	26.5	172	26.5	44	27.5
90-94	9372	15.9	13	11.3	198	15.1	240	11.7	437	11.6	8378	16.4	84	12.9	22	13.8
95+	3005	5.1	3	2.6	57	4.4	64	3.1	130	3.4	2728	5.3	18	2.8	5	3.1

<sup>1</sup> Age on March 6, 2021.

<sup>2</sup> Active participation is defined as current (Form 33 within last 15 months) or recent (Form 33 between 15 and 24 months ago) follow-up.

<sup>3</sup> Native Hawaiian/Other Pacific Islander participants (n=47) are combined with Asian participants for reporting purposes due to small numbers.

**Table 1.5**  
**Composition of WHI Cohort Over Time**  
 Data as of: March 6, 2021

	Enrolled in WHI (N=161,808)		Active <sup>1</sup> Participation at End of Extension 1 (9/30/2010) (N=104,888)		Active <sup>1</sup> Participation as of 3/06/2021 (N=59,107)	
	N	%	N	%	N	%
<b>Age<sup>2</sup></b>						
50-54	21569	13.3				
55-59	31990	19.8				
60-64	37210	23.0	1137	1.1		
65-69	35379	21.9	16490	15.7		
70-74	24906	15.4	25587	24.4	1666	2.8
75-79	10754	6.6	25353	24.2	14712	24.9
80-84			21808	20.8	18681	31.6
85-89			11636	11.1	14124	23.9
90-94			2839	2.7	7895	13.4
95+			38	<0.1	2029	3.4
<b>Ethnicity</b>						
Not Hispanic/Latina	153117	94.6	100996	96.3	56924	96.3
Hispanic/Latina	7312	4.5	3653	3.5	2057	3.5
Other/Not Reported	1379	0.9	239	0.2	126	0.2
<b>Race</b>						
American Indian/Alaska Native	540	0.3	242	0.2	131	0.2
Asian	4025	2.5	2108	2.0	1289	2.2
Native Hawaiian/Pacific Islander	137	0.1	82	0.1	47	0.1
Black/African American	14327	8.9	7285	6.9	3818	6.5
White	137628	85.1	92810	88.5	52505	88.8
More than one Race	1880	1.2	1305	1.2	733	1.2
Other/Not Reported	3271	2.0	1056	1.0	584	1.0
<b>Education<sup>3</sup></b>						
0-8 years	2665	1.7	869	0.8	320	0.5
Some high school	5979	3.7	2818	2.7	1074	1.8
High school diploma/GED	27624	17.2	16760	16.1	8273	14.1
School after high school	60909	37.9	38435	36.9	20769	35.4
College degree or higher	63415	39.5	45297	43.5	28276	48.2
<b>Income<sup>3</sup></b>						
< \$10,000	6937	4.6	2870	2.9	979	1.7
\$10,000 – \$19,999	18499	12.3	9543	9.6	3712	6.6
\$20,000 – \$34,999	36665	24.3	22385	22.6	10765	19.2
\$35,000 – \$49,999	30912	20.5	21008	21.2	11782	21.0
\$50,000 – \$74,999	29948	19.8	21611	21.8	13592	24.2
\$75,000 +	27973	18.5	21564	21.8	15349	27.3
<b>Study Component</b>						
Clinical Trial	68132	42.1	47325	45.1	26395	44.7
Observational Study	93676	57.9	57563	54.9	32712	55.3

<sup>1</sup> Active participation is defined as current (Form 33 within the last 15 months) or recent (Form 33 between 15 and 24 months ago) follow-up.

<sup>2</sup> Age at WHI Enrollment, End of Extension 1 (9/30/2010), and on 03/06/2021.

<sup>3</sup> Education and income reported at baseline.



**Table 1.6**  
**Response Rates to CCC Annual Mailings, Extension Study 2010-2025**  
**Year 2019 by Cohort and Regional Center**

Data as of: March 6, 2021

Cohort	1st Mailing Period				2nd Mailing Period					Cumulative Response
	Form <sup>1</sup>	Sent Mail 1	Response N	Response %	Past 2 <sup>nd</sup> mailing period	Sent Mail 2	Response N	Response %		
<b>Total</b>	33	63661	47130	74.0	63661	14119	22.2	4783	33.9	81.5
	151	62536	46100	73.7	62536	12178	19.5	4241	34.8	80.5
	151B	542	195	36.0	542	28	5.2	9	32.1	37.6
	159	5148	3632	70.6	5148	1288	25.0	446	34.6	79.2
<b>Medical Record Cohort<sup>2</sup></b>	33	14501	9814	67.7	14501	3942	27.2	1182	30.0	75.8
	151	14230	9672	68.0	14230	3349	23.5	994	29.7	75.0
	151B	177	55	31.1	177	11	6.2	3	27.3	32.8
	159	1189	793	66.7	1189	335	28.2	96	28.7	74.8
<b>Self Report Cohort<sup>3</sup></b>	33	49160	37316	75.9	49160	10177	20.7	3601	35.4	83.2
	151	48306	36428	75.4	48306	8829	18.3	3247	36.8	82.1
	151B	365	140	38.4	365	17	4.7	6	35.3	40.0
	159	3959	2839	71.7	3959	953	24.1	350	36.7	80.6
<b>Regional Center<sup>4</sup></b>										
<b>Boston</b>	33	6938	5072	73.1	6938	1578	22.7	531	33.7	80.8
	151	6863	5004	72.9	6863	1347	19.6	467	34.7	79.7
	151B	51	14	27.5	51	0	0.0	0	0.0	27.5
	159	572	391	68.4	572	145	25.3	59	40.7	78.7
<b>Buffalo</b>	33	10179	7445	73.1	10179	2368	23.3	808	34.1	81.1
	151	10087	7374	73.1	10087	2045	20.3	704	34.4	80.1
	151B	55	15	27.3	55	1	1.8	1	100.0	29.1
	159	808	581	71.9	808	186	23.0	64	34.4	79.8
<b>Columbus</b>	33	10329	7652	74.1	10329	2313	22.4	773	33.4	81.6
	151	10175	7482	73.5	10175	2043	20.1	716	35.0	80.6
	151B	49	19	38.8	49	0	0.0	0	0.0	38.8
	159	848	603	71.1	848	206	24.3	83	40.3	80.9
<b>Gainesville<sup>5</sup></b>	33	2311	1613	69.8	2311	625	27.0	182	29.1	77.7
	151	2311	1608	69.6	2311	632	27.3	178	28.2	77.3
	159	546	366	67.0	546	158	28.9	43	27.2	74.9
<b>Iowa</b>	33	6042	4692	77.7	6042	1196	19.8	462	38.6	85.3
	151	5933	4586	77.3	5933	1078	18.2	418	38.8	84.3
	151B	51	16	31.4	51	0	0.0	0	0.0	31.4
	159	507	370	73.0	507	121	23.9	45	37.2	81.9
<b>Seattle</b>	33	2932	2254	76.9	2932	564	19.2	206	36.5	83.9
	151	2845	2176	76.5	2845	496	17.4	182	36.7	82.9
	151B	36	17	47.2	36	2	5.6	1	50.0	50.0
	159	262	192	73.3	262	57	21.8	20	35.1	80.9
<b>Stanford</b>	33	10833	8415	77.7	10833	2036	18.8	773	38.0	84.8
	151	10573	8158	77.2	10573	1652	15.6	672	40.7	83.5
	151B	106	52	49.1	106	21	19.8	6	28.6	54.7
	159	733	538	73.4	733	158	21.6	61	38.6	81.7

<sup>1</sup> Form 33 = Medical History Update; Form 151 = Activities of Daily Life; Form 151B = Activities of Daily Life; Form 159 = Supplemental Questionnaire 2019.

<sup>2</sup> The MRC Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS who consented to WHI Extension Study 2010-2025.

<sup>3</sup> The SRC Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown Race/Ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study who consented to WHI Extension Study 2010-2025.

<sup>4</sup> Regional Center is determined based on the participant's responsible clinic at the start of the mailing window (2 months prior to the participant's mailing anniversary).

<sup>5</sup> The Gainesville Regional Center closed in April 2019.

**Table 1.6 (continued)**  
**Response Rates to CCC Annual Mailings, Extension Study 2010-2025**  
**Year 2019 by Cohort and Regional Center**

Data as of: March 6, 2021

Regional Center <sup>1</sup>	1st Mailing Period				2nd Mailing Period					Cumulative Response
	Form <sup>2</sup>	Sent Mail 1	Response N	Response %	Past 2 <sup>nd</sup> mailing period	Sent Mail 2	Response N	Response %		
<b>Tucson</b>	33	4123	2961	71.8	4123	1021	24.8	307	30.1	79.3
	151	4030	2893	71.8	4030	844	20.9	264	31.3	78.3
	151B	59	19	32.2	59	4	6.8	1	25.0	33.9
	159	352	238	67.6	352	110	31.3	36	32.7	77.8
<b>Wake Forest</b>	33	9974	7026	70.4	9974	2418	24.2	741	30.6	77.9
	151	9719	6819	70.2	9719	2041	21.0	640	31.4	76.7
	151B	135	43	31.9	135	0	0.0	0	0.0	31.9
	159	520	353	67.9	520	147	28.3	35	23.8	74.6

<sup>1</sup> Regional Center is determined based on the participant's responsible clinic at the start of the mailing window (2 months prior to the participant's mailing anniversary).

<sup>2</sup> Form 33 = Medical History Update; Form 151 = Activities of Daily Life; Form 151B = Activities of Daily Life; Form 159 = Supplemental Questionnaire 2019.

**Table 1.6 (continued)**  
**Response Rates to CCC Annual Mailings, Extension Study 2010-2025**  
**Year 2020 by Cohort and Regional Center**

Data as of: March 6, 2021

Cohort	1st Mailing Period				2nd Mailing Period					Cumulative Response
	Form <sup>1</sup>	Sent Mail 1	Response N	Response %	Past 2 <sup>nd</sup> mailing period	Sent Mail 2	Response N	Response %		
<b>Total</b>	33	60406	40471	67.0	57378	8514	14.1	2094	24.6	70.5
	151	2250	1451	64.5	2100	30	1.3	0	0.0	64.5
	151B	55548	36169	65.1	52732	8613	15.5	2584	30.0	69.8
<b>Medical Record Cohort<sup>2</sup></b>	33	13861	8590	62.0	13024	2608	18.8	537	20.6	65.8
	151	561	324	57.8	517	7	1.2	0	0.0	57.8
	151B	12861	7786	60.5	12083	2490	19.4	584	23.5	65.1
<b>Self-Report Cohort<sup>3</sup></b>	33	46545	31881	68.5	44354	5906	12.7	1557	26.4	71.8
	151	1689	1127	66.7	1583	23	1.4	0	0.0	66.7
	151B	42687	28383	66.5	40649	6123	14.3	2000	32.7	71.2
<b>Regional Center<sup>4</sup></b>										
<b>Boston</b>	33	6346	4285	67.5	6195	1005	15.8	268	26.7	71.7
	151	328	218	66.5	325	1	0.3	0	0.0	66.5
	151B	5742	3790	66.0	5600	946	16.5	270	28.5	70.7
<b>Buffalo</b>	33	9913	6454	65.1	9657	1531	15.4	345	22.5	68.6
	151	494	299	60.5	475	21	4.3	0	0.0	60.5
	151B	8988	5665	63.0	8761	1485	16.5	434	29.2	67.9
<b>Columbus</b>	33	14485	9961	68.8	13633	1883	13.0	479	25.4	72.1
	151	444	280	63.1	402	1	0.2	0	0.0	63.1
	151B	13654	9160	67.1	12852	1955	14.3	617	31.6	71.6
<b>Iowa</b>	33	901	649	72.0	901	133	14.8	47	35.3	77.2
	151	261	202	77.4	261	0	0.0	0	0.0	77.4
	151B	402	293	72.9	402	77	19.2	27	35.1	79.6
<b>Seattle</b>	33	4237	2617	61.8	3722	455	10.7	82	18.0	63.7
	151	84	48	57.1	64	1	1.2	0	0.0	57.1
	151B	3994	2385	59.7	3504	467	11.7	109	23.3	62.4
<b>Stanford</b>	33	11139	7725	69.4	10359	1080	9.7	290	26.9	72.0
	151	62	17	27.4	15	0	0.0	0	0.0	27.4
	151B	10532	7073	67.2	9829	1266	12.0	459	36.3	71.5
<b>Tucson</b>	33	3119	2112	67.7	3114	519	16.6	123	23.7	71.7
	151	10	6	60.0	10	0	0.0	0	0.0	60.0
	151B	2957	1961	66.3	2952	555	18.8	156	28.1	71.6
<b>Wake Forest</b>	33	10266	6668	65.0	9797	1908	18.6	460	24.1	69.4
	151	567	381	67.2	548	6	1.1	0	0.0	67.2
	151B	9279	5842	63.0	8832	1862	20.1	512	27.5	68.5

<sup>1</sup> Form 33 = Medical History Update; Form 151 = Activities of Daily Life; Form 151B = Activities of Daily Life; Form 159 = Supplemental Questionnaire 2019.

<sup>2</sup> The MRC Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS who consented to WHI Extension Study 2010-2025.

<sup>3</sup> The SRC Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study who consented to WHI Extension Study 2010-2025.

<sup>4</sup> Regional Center is determined based on the participant's responsible clinic at the start of the mailing window (2 months prior to the participant's mailing anniversary).

**Table 1.7**  
**Response Rates to Regional Center Follow-up and Cumulative Response**  
**Extension Study 2010-2025, Year 2019 by Cohort and Regional Center**

Data as of: March 6, 2021

Cohort	Form <sup>1</sup>	Eligible for RC Follow-up		Respondents		Total Estimated Response Rate	
		N	N	%	%		
<b>Total</b>	33	16049	9970	62.1	86.3		
	151	17380	2136	12.3	74.0		
	151B	591	44	7.4	16.4		
	159	1485	42	2.8	70.5		
<b>Medical Record Cohort<sup>2</sup></b>	33	4944	3274	66.2	83.5		
	151	5340	781	14.6	67.6		
	151B	201	20	10.0	15.8		
	159	430	16	3.7	64.8		
<b>Self Report Cohort<sup>3</sup></b>	33	11105	6696	60.3	87.1		
	151	12040	1355	11.3	76.0		
	151B	390	24	6.2	16.7		
	159	1055	26	2.5	72.4		
<b>Regional Center<sup>4</sup></b>							
<b>Boston</b>	33	1742	953	54.7	84.8		
	151	1921	10	0.5	71.2		
	151B	72	1	1.4	9.4		
	159	156	1	0.6	70.6		
<b>Buffalo</b>	33	2713	1848	68.1	87.8		
	151	2933	1043	35.6	79.7		
	151B	90	42	46.7	30.9		
	159	256	38	14.8	74.1		
<b>Columbus</b>	33	2470	1432	58.0	85.5		
	151	2625	5	0.2	72.1		
	151B	50	0	0.0	10.3		
	159	219	1	0.5	72.5		
<b>Gainesville<sup>5</sup></b>	33	694	450	64.8	85.9		
	151	729	152	20.9	74.1		
	159	178	1	0.6	66.6		
<b>Iowa</b>	33	1023	537	52.5	85.2		
	151	1133	10	0.9	75.8		
	151B	60	0	0.0	8.4		
	159	104	0	0.0	74.5		
<b>Seattle</b>	33	761	500	65.7	88.5		
	151	813	69	8.5	74.4		
	151B	32	0	0.0	26.1		
	159	82	0	0.0	68.6		
<b>Stanford</b>	33	2487	1677	67.4	89.0		
	151	2680	202	7.5	75.3		
	151B	87	0	0.0	21.8		
	159	205	1	0.5	71.0		

<sup>1</sup> Form 33 = Medical History Update; Form 151 = Activities of Daily Life; Form 151B = Activities of Daily Life; Form 159 = Supplemental Questionnaire 2019.

<sup>2</sup> The MRC Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS who consented to WHI Extension Study 2010-2025.

<sup>3</sup> The SRC Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study who consented to WHI Extension Study 2010-2025.

<sup>4</sup> Regional Center is determined based on the participant's responsible clinic at the start of the mailing window (2 months prior to the participant's mailing anniversary).

<sup>5</sup> The Gainesville Regional Center closed in April 2019.

**Table 1.7 (continued)**  
**Response Rates to Regional Center Follow-up and Cumulative Response**  
**Extension Study 2010-2025, Year 2019 by Cohort and Regional Center**

Data as of: March 6, 2021

<b>Regional Center<sup>1</sup></b>	<b>Form<sup>2</sup></b>	<b>Eligible for</b>	<b>Respondents</b>		<b>Total Estimated</b>
		<b>RC Follow-up</b>	<b>N</b>	<b>%</b>	<b>Response Rate</b>
		<b>N</b>	<b>N</b>	<b>%</b>	<b>%</b>
<b>Tucson</b>	33	1158	652	56.3	84.4
	151	1260	49	3.9	69.7
	151B	49	0	0.0	15.5
	159	101	0	0.0	68.5
<b>Wake Forest</b>	33	3001	1921	64.0	84.5
	151	3286	596	18.1	71.2
	151B	151	1	0.7	13.6
	159	184	0	0.0	64.2

<sup>1</sup> Regional Center is determined based on the participant's responsible clinic at the start of the mailing window (2 months prior to the participant's mailing anniversary).

<sup>2</sup> Form 33 = Medical History Update; Form 151 = Activities of Daily Life; Form 151B = Activities of Daily Life; Form 159 = Supplemental Questionnaire 2019.

**Table 1.7 (continued)**  
**Response Rates to Regional Center Follow-up and Cumulative Response**  
**Extension Study 2010-2025, Year 2020 by Cohort and Regional Center**

Data as of: March 6, 2021

Cohort	Form <sup>1</sup>	Eligible for RC Follow-up		Total Estimated Response Rate	
		N	Respondents N	%	%
<b>Total</b>	33	19917	7816	39.2	74.3
	151	1572	51	3.2	46.2
	151B	20188	1318	6.5	63.8
<b>Medical Record Cohort<sup>2</sup></b>	33	5628	2341	41.6	70.8
	151	481	18	3.7	39.0
	151B	5726	354	6.2	57.5
<b>Self Report Cohort<sup>3</sup></b>	33	14289	5475	38.3	75.4
	151	1091	33	3.0	48.8
	151B	14462	964	6.7	65.8
<b>Regional Center<sup>4</sup></b>					
<b>Boston</b>	33	2047	759	37.1	74.9
	151	204	0	0.0	48.2
	151B	2050	129	6.3	64.7
<b>Buffalo</b>	33	3439	1535	44.6	75.0
	151	377	32	8.5	47.0
	151B	3481	613	17.6	66.1
<b>Columbus</b>	33	4356	1453	33.4	73.1
	151	304	0	0.0	44.3
	151B	4474	170	3.8	64.6
<b>Iowa</b>	33	163	144	88.3	83.6
	151	101	0	0.0	58.6
	151B	103	0	0.0	63.9
<b>Seattle</b>	33	1746	571	32.7	68.3
	151	86	1	1.2	34.2
	151B	1791	57	3.2	56.3
<b>Stanford</b>	33	3548	1195	33.7	74.1
	151	107	0	0.0	13.1
	151B	3623	169	4.7	65.0
<b>Tucson</b>	33	982	413	42.1	76.1
	151	10	0	0.0	31.6
	151B	1006	44	4.4	65.1
<b>Wake Forest</b>	33	3636	1746	48.0	76.3
	151	383	18	4.7	48.4
	151B	3660	136	3.7	61.2

<sup>1</sup> Form 33 = Medical History Update; Form 151 = Activities of Daily Life; Form 151B = Activities of Daily Life; Form 159 = Supplemental Questionnaire 2019.

<sup>2</sup> The MRC Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS who consented to WHI Extension Study 2010-2025.

<sup>3</sup> The SRC Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study who consented to WHI Extension Study 2010-2025.

<sup>4</sup> Regional Center is determined based on the participant's responsible clinic at the start of the mailing window (2 months prior to the participant's mailing anniversary).

**Table 1.8**  
**Form 2 vs. Imputed Form 41 Race/ Ethnicity<sup>1</sup>**

Data as of: March 06, 2021

Form 2 Race/Ethnicity <sup>1</sup>	Imputed F41 Race/ Ethnicity <sup>1</sup>													
	American Indian/Alaska Native		Asian or Native Hawaiian/ Other Pacific Islander <sup>2</sup>		Hispanic/Latina		Non-Hispanic Black/African American		Non-Hispanic White		More than one Race		Other/Not reported	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
American Indian/Alaska Native	397	81.5	2	<0.1	27	0.4	38	0.3	137	0.1	108	6.5	4	0.5
Asian/Pacific Islander	0	0.0	3901	95.5	60	0.8	3	<0.1	31	<0.1	187	11.2	8	1.1
Non-Hispanic Black/African American	28	5.7	2	<0.1	106	1.4	13958	98.5	167	0.1	296	17.7	61	8.0
Hispanic/Latino	2	0.4	2	<0.1	6230	85.2	18	0.1	208	0.2	5	0.3	19	2.5
Non-Hispanic White	47	9.7	11	0.3	637	8.7	36	0.3	131834	98.9	822	49.3	154	20.2
Other/Unspecified	13	2.7	166	4.1	252	3.4	114	0.8	951	0.7	251	15.0	515	67.7

<sup>1</sup> Race/ethnicity as identified on Form 2 at baseline.

<sup>2</sup> Native Hawaiian/Other Pacific Islander participants (n=119) are combined with Asian participants for reporting purposes due to small numbers.

**Table 2.1**  
**Participation and Vital Status: WHI Participants by Extension Study Participation and Cohort**

Data as of: March 6, 2021

**WHI Extension Study 2010-2025 Participants**

	MRC Cohort <sup>1</sup> (N = 22,316)		SRC Cohort <sup>2</sup> (N = 71,251)		Total Participants (N = 93,567)	
	N	%	N	%	N	%
<b>Vital Status/Participation</b>						
Deceased	6916	31.0	22184	31.1	29100	31.1
Alive: Current Participation <sup>3</sup>	12552	56.2	42300	59.4	54852	58.6
Alive: Recent Participation <sup>4</sup>	1097	4.9	3158	4.4	4255	4.5
Stopped Follow-Up <sup>5</sup>	858	3.8	2113	3.0	2971	3.2
Lost to Follow-Up <sup>6</sup>	893	4.0	1496	2.1	2389	2.6

Data as of: March 6, 2021; Status as of September 30, 2010

**WHI Extension Study 2005-2010 Participants**

	MRC Super Cohort <sup>7</sup> (N = 29,368)		SRC Super Cohort <sup>8</sup> (N = 86,039)		Total Participants (N = 115,407)	
	N	%	N	%	N	%
<b>Vital Status/Participation</b>						
Deceased	2360	8.0	6211	7.2	8571	7.4
Alive: Current Participation <sup>3</sup>	25884	88.1	78194	90.9	104078	90.2
Alive: Recent Participation <sup>4</sup>	321	1.1	489	0.6	810	0.7
Alive: Past/Unknown Participation <sup>9</sup>	32	0.1	39	<0.1	71	0.1
Stopped Follow-Up <sup>5</sup>	459	1.6	794	0.9	1253	1.1
Lost to Follow-Up <sup>6</sup>	312	1.1	312	0.4	624	0.5

Data as of: March 6, 2021; Status as of April 8, 2005

**WHI Participants**

	MRC Super Cohort <sup>7</sup> (N = 44,174)		SRC Super Cohort <sup>8</sup> (N = 117,634)		Total Participants (N = 161,808)	
	N	%	N	%	N	%
<b>Vital Status/Participation</b>						
Deceased	2820	6.4	7232	6.1	10052	6.2
Alive: Current Participation <sup>10</sup>	38165	86.4	105585	89.8	143750	88.8
Alive: Recent Participation <sup>11</sup>	342	0.8	419	0.4	761	0.5
Alive: Past/Unknown Participation <sup>12</sup>	21	<0.1	41	<0.1	62	<0.1
Stopped Follow-Up <sup>5</sup>	1699	3.8	2757	2.3	4456	2.8
Lost to Follow-Up <sup>6</sup>	1127	2.6	1600	1.4	2727	1.7

<sup>1</sup> The MRC Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS who consented to WHI Extension Study 2010-2025.

<sup>2</sup> The SRC Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study who consented to WHI Extension Study 2010-2025.

<sup>3</sup> Participants who have filled in a Form 33 within the last 15 months.

<sup>4</sup> Participants who last filled in a Form 33 between 15 and 24 months ago.

<sup>5</sup> Participants with codes 5 (no follow-up) or 8 (absolutely no follow-up) on Form 7 or 9.

<sup>6</sup> Participants not in any of the above categories.

<sup>7</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>8</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaskan Native, Asian/Pacific Islander, and Unknown Race/Ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study.

<sup>9</sup> Participants without a Form 33 within the last 24 months, who have been located (as indicated on Form 23) within the last 6 months.

<sup>10</sup> CT participants who have filled in a Form 33 within the last 9 months; and OS participants who have filled in a Form 33 within the last 15 months.

<sup>11</sup> CT participants who last filled in a Form 33 between 9 and 18 months ago; and OS participants who last filled in a Form 33 between 15 and 24 months ago.

<sup>12</sup> CT participants without a Form 33 within the last 18 months, who have been located (as indicated on Form 23) within the last 6 months; and OS participants without a Form 33 within the last 24 months, who have been located (as indicated on Form 23) within the last 6 months.



**Table 2.2**  
**Participation and Vital Status: WHI Extension Study 2010-2025 Participation by MRC vs. SRC Cohort**

Data as of: March 6, 2021

Vital Status/Participation	MRC Cohort <sup>1</sup> (N = 44,174)		SRC Cohort <sup>2</sup> (N = 117,634)		Total Participants (N = 161,808)	
	N	%	N	%	N	%
Deceased	12096	27.4	35627	30.3	47723	29.5
Alive: Current Participation <sup>3</sup>	12552	28.4	42300	36.0	54852	33.9
Alive: Recent Participation <sup>4</sup>	1097	2.5	3158	2.7	4255	2.6
Stopped Follow-Up <sup>5</sup>	17536	39.7	35053	29.8	52589	32.5
Lost to Follow-Up <sup>6</sup>	893	2.0	1496	1.3	2389	1.5

<sup>1</sup> The MRC Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS who consented to WHI Extension Study 2010-2025.

<sup>2</sup> The SRC Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study who consented to WHI Extension Study 2010-2025.

<sup>3</sup> Participants who have filled in a Form 33 within the last 15 months.

<sup>4</sup> Participants who last filled in a Form 33 between 15 and 24 months ago.

<sup>5</sup> Participants with codes 5 (no follow-up) or 8 (absolutely no follow-up) on Form 7 or 9, or who did not consent to WHI Extension Study 2010-2025.

<sup>6</sup> Participants not in any of the above categories.

**Table 2.3**  
**Proxy Follow-up Status<sup>1</sup>:**  
**WHI Extension Study 2010-2025 Participants by Cohort, Current Age<sup>2</sup>, and Race/Ethnicity**

Data as of: March 6, 2021

	Total		Current Age <sup>2</sup>							
	N	%	69-79		80-84		85-89		≥90	
	N	%	N	%	N	%	N	%	N	%
<b>MRC Cohort<sup>3</sup></b>	(N = 13649)		(N = 3173)		(N = 4273)		(N = 3458)		(N = 2745)	
Proxy follow-up	675	4.9	30	0.9	102	2.4	191	5.5	352	12.8
<b>SRC Cohort<sup>4</sup></b>	(N = 45458)		(N = 9502)		(N = 14354)		(N = 11970)		(N = 9632)	
Proxy follow-up	2049	4.5	85	0.9	259	1.8	605	5.1	1100	11.4
<b>Total</b>	(N = 59107)		(N = 12675)		(N = 18627)		(N = 15428)		(N = 12377)	
Proxy follow-up	2724	4.6	115	0.9	361	1.9	796	5.2	1452	11.7

	Race/Ethnicity													
	American Indian/ Alaska Native		Asian or Native Hawaiian/ Other Pacific Islander <sup>5</sup>		Non-Hispanic Black/African American		Hispanic/ Latina		Non-Hispanic White		More than one Race		Other/Not Reported	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
<b>MRC Cohort<sup>3</sup></b>	(N = 30)		(N = 162)		(N = 3727)		(N = 1739)		(N = 7751)		(N = 194)		(N = 46)	
Proxy follow-up	3	10.0	10	6.2	150	4.0	71	4.1	426	5.5	9	4.6	6	13.0
<b>SRC Cohort<sup>4</sup></b>	(N = 85)		(N = 1146)		(N = 50)		(N = 318)		(N = 43290)		(N = 455)		(N = 114)	
Proxy follow-up	4	4.7	49	4.3	5	10.0	14	4.4	1956	4.5	18	4.0	3	2.6
<b>Total</b>	(N = 115)		(N = 1308)		(N = 3777)		(N = 2057)		(N = 51041)		(N = 649)		(N = 160)	
Proxy follow-up	7	6.1	59	4.5	155	4.1	85	4.1	2382	4.7	27	4.2	9	5.6

<sup>1</sup> For participants alive as of March 6, 2021 and with current, recent or past/unknown participation.

<sup>2</sup> Age on March 6, 2021.

<sup>3</sup> The MRC Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants from the CT and OS who consented to WHI Extension Study 2010-2025.

<sup>4</sup> The SRC Cohort includes all Non-Hispanic White, American Indian/Alaskan Native, Asian/Pacific Islander, and Unknown Race/Ethnicity participants from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study who consented to WHI Extension Study 2010-2020.

<sup>5</sup> Native Hawaiian/Other Pacific Islander participants (n=47) are combined with Asian participants for reporting purposes due to small numbers.

**Table 2.4**  
**Participation and Vital Status: CT and OS Participants**

Data as of: March 6, 2021

**WHI Extension Study 2010-2025 Participants**

<b>Vital Status/Participation</b>	<b>CT Participants</b> (N = 41,499)		<b>OS Participants</b> (N = 52,068)	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
Deceased	12613	30.4	16487	31.7
Alive: Current Participation <sup>1</sup>	24421	58.8	30431	58.4
Alive: Recent Participation <sup>2</sup>	1974	4.8	2281	4.4
Stopped Follow-Up <sup>3</sup>	1337	3.2	1634	3.1
Lost to Follow-Up <sup>4</sup>	1154	2.8	1235	2.4

Data as of: March 6, 2021; Status as of September 30, 2010

**WHI Extension Study 2005-2010 Participants**

<b>Vital Status/Participation</b>	<b>CT Participants</b> (N = 52,176)		<b>OS Participants</b> (N = 63,231)	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
Deceased	3812	7.3	4759	7.5
Alive: Current Participation <sup>1</sup>	46883	89.9	57195	90.5
Alive: Recent Participation <sup>2</sup>	442	0.8	368	0.6
Alive: Past/Unknown Participation <sup>5</sup>	37	0.1	34	0.1
Stopped Follow-Up <sup>3</sup>	649	1.2	604	1.0
Lost to Follow-Up <sup>4</sup>	353	0.7	271	0.4

Data as of: March 6, 2021; Status as of April 8, 2005

**WHI Participants**

<b>Vital Status/Participation</b>	<b>CT Participants</b> (N = 68,132)		<b>OS Participants</b> (N = 93,676)	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
Deceased	3701	5.4	6351	6.8
Alive: Current Participation <sup>6</sup>	61160	89.8	82590	88.2
Alive: Recent Participation <sup>7</sup>	339	0.5	422	0.5
Alive: Past/Unknown Participation <sup>8</sup>	10	<0.1	52	0.1
Stopped Follow-Up <sup>3</sup>	2194	3.2	2262	2.4
Lost to Follow-Up <sup>4</sup>	728	1.1	1999	2.1

<sup>1</sup> Participants who have filled in a Form 33 within the last 15 months.

<sup>2</sup> Participants who last filled in a Form 33 between 15 and 24 months ago.

<sup>3</sup> Participants with codes 5 (no follow-up) or 8 (absolutely no follow-up) on Form 7 or 9.

<sup>4</sup> Participants not in any of the above categories.

<sup>5</sup> Participants without a Form 33 within the last 24 months, who have been located (as indicated on Form 23) within the last 6 months.

<sup>6</sup> CT participants who have filled in a Form 33 within the last 9 months; OS participants who have filled in a Form 33 within the last 15 months.

<sup>7</sup> CT participants who last filled in a Form 33 between 9 and 18 months ago; OS participants who last filled in a Form 33 between 15 and 24 months ago.

<sup>8</sup> CT participants without a Form 33 within the last 18 months, who have been located (as indicated on Form 23) within the last 6 months; OS participants without a Form 33 within the last 24 months, who have been located (as indicated on Form 23) within the last 6 months.

**Table 2.5**  
**Participation and Vital Status: WHI Extension Study 2010-2025 Participation by CT vs. OS Cohort**

Data as of: March 6, 2021

<b>Vital Status/Participation</b>	<b>CT Participants</b> (N = 68,132)		<b>OS Participants</b> (N = 93,676)	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
Deceased	20126	29.5	27597	29.5
Alive: Current Participation <sup>1</sup>	24421	35.8	30431	32.5
Alive: Recent Participation <sup>2</sup>	1974	2.9	2281	2.4
Stopped Follow-Up <sup>3</sup>	20457	30.0	32132	34.3
Lost to Follow-Up <sup>4</sup>	1154	1.7	1235	1.3

<sup>1</sup> Participants who have filled in a Form 33 within the last 15 months.

<sup>2</sup> Participants who last filled in a Form 33 between 15 and 24 months ago.

<sup>3</sup> Participants with codes 5 (no follow-up) or 8 (absolutely no follow-up) on Form 7 or 9, or who did not consent to WHI Extension Study 2010-2025.

<sup>4</sup> Participants not in any of the above categories.

**Table 2.6**  
**Cause of Death<sup>1</sup> (Annualized Percentages): MRC and SRC Super Cohort Participants**

Data as of: March 6, 2021; Events through March 6, 2021

	<b>MRC Super Cohort<sup>2</sup></b>	<b>SRC Super Cohort<sup>3</sup></b>
<b>Number of participants</b>	44174	117634
<b>Mean follow-up (months)</b>	239.4	241.2
<b>Total death</b>	19430 (2.21%)	52547 (2.22%)
Adjudicated death	19009 (2.16%)	49553 (2.10%)
Centrally adjudicated death	9141 (1.04%)	7413 (0.31%)
Locally adjudicated death	679 (0.08%)	4681 (0.20%)
Identified by NDI search	9189 (1.04%)	37459 (1.58%)
Not yet adjudicated	413 (0.05%)	0 (0.00%)
Form 120 death <sup>4</sup>	8 (<0.01%)	2994 (0.13%)
<b>Cardiovascular</b>		
Atherosclerotic cardiac	2755 (0.31%)	6224 (0.26%)
Definite CHD deaths after 10/99	1045 (0.12%)	1955 (0.08%)
Possible CHD deaths after 10/99	1710 (0.19%)	4224 (0.18%)
Cerebrovascular	1572 (0.18%)	3798 (0.16%)
Pulmonary embolism	112 (0.01%)	210 (0.01%)
Other cardiovascular	2037 (0.23%)	5695 (0.24%)
Unknown cardiovascular	34 (<0.01%)	101 (<0.01%)
<b>Total cardiovascular deaths</b>	6510 (0.74%)	16028 (0.68%)
<b>Cancer</b>		
Breast cancer	483 (0.05%)	1533 (0.06%)
Ovarian cancer	235 (0.03%)	852 (0.04%)
Endometrial cancer	54 (0.01%)	224 (0.01%)
Colorectal cancer	426 (0.05%)	985 (0.04%)
Uterus cancer	55 (0.01%)	135 (0.01%)
Lung cancer	1144 (0.13%)	2648 (0.11%)
Pancreas cancer	432 (0.05%)	1125 (0.05%)
Lymphoma (NHL only)	189 (0.02%)	635 (0.03%)
Leukemia	184 (0.02%)	593 (0.03%)
Melanoma	50 (0.01%)	161 (0.01%)
Brain cancer	86 (0.01%)	349 (0.01%)
Multiple myeloma	170 (0.02%)	360 (0.02%)
Other cancer	882 (0.10%)	2386 (0.10%)
Unknown cancer site	183 (0.02%)	568 (0.02%)
<b>Total cancer deaths</b>	4573 (0.52%)	12554 (0.53%)
<b>Accident/injury</b>		
Homicide	17 (<0.01%)	19 (<0.01%)
Accident	431 (0.05%)	1282 (0.05%)
Suicide	18 (<0.01%)	63 (<0.01%)
Other injury	20 (<0.01%)	36 (<0.01%)
<b>Total accident/injury deaths</b>	486 (0.06%)	1400 (0.06%)

<sup>1</sup> Includes deaths for non-Extension Study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.

<sup>2</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>3</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study.

<sup>4</sup> Includes SRC Cohort participants and discovered deaths among non-Extension Study 2010-2025 participants that occurred during Extension Study 2010-2025.

**Table 2.6 (continued)**  
**Cause of Death<sup>1</sup> (Annualized Percentages): MRC and SRC Super Cohort Participants**

Data as of: March 6, 2021; Events through March 6, 2021

	<b>MRC Super Cohort<sup>2</sup></b>	<b>SRC Super Cohort<sup>3</sup></b>
<b>Number of participants</b>	44174	117634
<b>Mean follow-up (months)</b>	239.4	241.2
<b>Other</b>		
Alzheimer's disease	1177 (0.13%)	3631 (0.15%)
COPD	752 (0.09%)	2055 (0.09%)
Pneumonia	510 (0.06%)	1213 (0.05%)
Pulmonary fibrosis	199 (0.02%)	506 (0.02%)
Renal failure	440 (0.05%)	734 (0.03%)
Sepsis	527 (0.06%)	1084 (0.05%)
Dementia, other than Alzheimer's	1258 (0.14%)	3579 (0.15%)
Amyotrophic lateral sclerosis	49 (0.01%)	239 (0.01%)
Parkinson's	219 (0.02%)	773 (0.03%)
Hepatic cirrhosis	105 (0.01%)	214 (0.01%)
COVID-19	16 (<0.01%)	31 (<0.01%)
Other known cause	2000 (0.23%)	6012 (0.25%)
Unknown cause	196 (0.02%)	2494 (0.11%)
<b>Total other cause deaths</b>	<b>7448 (0.85%)</b>	<b>22565 (0.95%)</b>

<sup>1</sup> Includes deaths for non-Extension Study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.

<sup>2</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>3</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study.

**Table 2.7**  
**Cause of Death<sup>1</sup> (Annualized Percentages): CT and OS Participants**

Data as of: March 6, 2021; Events through March 6, 2021

	CT	OS	Total
<b>Number of participants</b>	68132	93676	161808
<b>Mean follow-up (months)</b>	245.9	236.9	240.7
<b>Total death</b>	29136 (2.09%)	42841 (2.32%)	71977 (2.22%)
Adjudicated death	27830 (1.99%)	40732 (2.20%)	68562 (2.11%)
Centrally adjudicated death	11355 (0.81%)	5199 (0.28%)	16554 (0.51%)
Locally adjudicated death (final)	1 (<0.01%)	5359 (0.29%)	5360 (0.17%)
Identified by NDI search	16474 (1.18%)	30174 (1.63%)	46648 (1.44%)
Not yet adjudicated	346 (0.02%)	67 (<0.01%)	413 (0.01%)
Form 120 death <sup>2</sup>	960 (0.07%)	2042 (0.11%)	3002 (0.09%)
<b>Cardiovascular</b>			
Atherosclerotic cardiac	3730 (0.27%)	5249 (0.28%)	8979 (0.28%)
Definite CHD deaths after 10/99	1394 (0.10%)	1606 (0.09%)	3000 (0.09%)
Possible CHD deaths after 10/99	2323 (0.17%)	3611 (0.20%)	5934 (0.18%)
Cerebrovascular	2190 (0.16%)	3180 (0.17%)	5370 (0.17%)
Pulmonary embolism	160 (0.01%)	162 (0.01%)	322 (0.01%)
Other cardiovascular	3097 (0.22%)	4635 (0.25%)	7732 (0.24%)
Unknown cardiovascular	31 (<0.01%)	104 (0.01%)	135 (<0.01%)
<b>Total cardiovascular deaths</b>	9208 (0.66%)	13330 (0.72%)	22538 (0.69%)
<b>Cancer</b>			
Breast cancer	658 (0.05%)	1358 (0.07%)	2016 (0.06%)
Ovarian cancer	424 (0.03%)	663 (0.04%)	1087 (0.03%)
Endometrial cancer	120 (0.01%)	158 (0.01%)	278 (0.01%)
Colorectal cancer	606 (0.04%)	805 (0.04%)	1411 (0.04%)
Uterus cancer	80 (0.01%)	110 (0.01%)	190 (0.01%)
Lung cancer	1651 (0.12%)	2141 (0.12%)	3792 (0.12%)
Pancreas cancer	662 (0.05%)	895 (0.05%)	1557 (0.05%)
Lymphoma (NHL only)	325 (0.02%)	499 (0.03%)	824 (0.03%)
Leukemia	329 (0.02%)	448 (0.02%)	777 (0.02%)
Melanoma	94 (0.01%)	117 (0.01%)	211 (0.01%)
Brain cancer	189 (0.01%)	246 (0.01%)	435 (0.01%)
Multiple myeloma	228 (0.02%)	302 (0.02%)	530 (0.02%)
Other cancer	1378 (0.10%)	1890 (0.10%)	3268 (0.10%)
Unknown cancer site	304 (0.02%)	447 (0.02%)	751 (0.02%)
<b>Total cancer deaths</b>	7048 (0.50%)	10079 (0.54%)	17127 (0.53%)
<b>Accident/injury</b>			
Homicide	15 (<0.01%)	21 (<0.01%)	36 (<0.01%)
Accident	695 (0.05%)	1018 (0.06%)	1713 (0.05%)
Suicide	27 (<0.01%)	54 (<0.01%)	81 (<0.01%)
Other injury	24 (<0.01%)	32 (<0.01%)	56 (<0.01%)
<b>Total accident/injury deaths</b>	761 (0.05%)	1125 (0.06%)	1886 (0.06%)
<b>Other</b>			
Alzheimer's disease	1856 (0.13%)	2952 (0.16%)	4808 (0.15%)
COPD	1182 (0.08%)	1625 (0.09%)	2807 (0.09%)
Pneumonia	727 (0.05%)	996 (0.05%)	1723 (0.05%)
Pulmonary fibrosis	320 (0.02%)	385 (0.02%)	705 (0.02%)
Renal failure	488 (0.03%)	686 (0.04%)	1174 (0.04%)
Sepsis	694 (0.05%)	917 (0.05%)	1611 (0.05%)
Dementia, other than Alzheimer's	1926 (0.14%)	2911 (0.16%)	4837 (0.15%)
Amyotrophic lateral sclerosis	112 (0.01%)	176 (0.01%)	288 (0.01%)
Parkinson's	377 (0.03%)	615 (0.03%)	992 (0.03%)
Hepatic cirrhosis	143 (0.01%)	176 (0.01%)	319 (0.01%)
COVID-19	22 (<0.01%)	25 (<0.01%)	47 (<0.01%)
Other known cause	3000 (0.21%)	5012 (0.27%)	8012 (0.25%)
Unknown cause	926 (0.07%)	1764 (0.10%)	2690 (0.08%)
<b>Total other cause deaths</b>	11773 (0.84%)	18240 (0.99%)	30013 (0.92%)

<sup>1</sup> Includes deaths for non-Extension study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.

<sup>2</sup> Includes SRC Cohort participants and discovered deaths among non-Extension Study 2010-2025 participants that occurred during Extension Study 2010-2025.

**Table 2.8**  
**Cause of Death Excluding Discovered Deaths Among Non-Extension Study Participants<sup>1</sup> (Annualized Percentages):**  
**CT and OS Participants**

Data as of: March 6, 2021; Events through March 6, 2021

	<b>CT</b>	<b>OS</b>	<b>Total</b>
<b>Number of participants</b>	68132	93676	161808
<b>Mean follow-up (months)</b>	207.7	192.3	198.8
<b>Death</b>	20126 (1.71%)	27597 (1.84%)	47723 (1.78%)
Adjudicated death	18827 (1.60%)	25498 (1.70%)	44325 (1.65%)
Centrally adjudicated death	11280 (0.96%)	5120 (0.34%)	16400 (0.61%)
Locally adjudicated death (final)	1 (<0.01%)	5283 (0.35%)	5284 (0.20%)
Identified by NDI search	7546 (0.64%)	15095 (1.01%)	22641 (0.84%)
Not yet adjudicated	346 (0.03%)	67 (<0.01%)	413 (0.02%)
Form 120 death <sup>2</sup>	953 (0.08%)	2032 (0.14%)	2985 (0.11%)
<b>Cardiovascular</b>			
Atherosclerotic cardiac	2605 (0.22%)	3264 (0.22%)	5869 (0.22%)
Definite CHD deaths after 10/99	1178 (0.10%)	1287 (0.09%)	2465 (0.09%)
Possible CHD deaths after 10/99	1414 (0.12%)	1945 (0.13%)	3359 (0.13%)
Cerebrovascular	1526 (0.13%)	2025 (0.13%)	3551 (0.13%)
Pulmonary embolism	134 (0.01%)	133 (0.01%)	267 (0.01%)
Other cardiovascular	2018 (0.17%)	2908 (0.19%)	4926 (0.18%)
Unknown cardiovascular	29 (<0.01%)	103 (0.01%)	132 (<0.01%)
<b>Total cardiovascular deaths</b>	6312 (0.54%)	8433 (0.56%)	14745 (0.55%)
<b>Cancer</b>			
Breast cancer	491 (0.04%)	1043 (0.07%)	1534 (0.06%)
Ovarian cancer	343 (0.03%)	529 (0.04%)	872 (0.03%)
Endometrial cancer	101 (0.01%)	123 (0.01%)	224 (0.01%)
Colorectal cancer	475 (0.04%)	606 (0.04%)	1081 (0.04%)
Uterus cancer	59 (0.01%)	77 (0.01%)	136 (0.01%)
Lung cancer	1310 (0.11%)	1629 (0.11%)	2939 (0.11%)
Pancreas cancer	534 (0.05%)	664 (0.04%)	1198 (0.04%)
Lymphoma (NHL only)	262 (0.02%)	383 (0.03%)	645 (0.02%)
Leukemia	267 (0.02%)	341 (0.02%)	608 (0.02%)
Melanoma	79 (0.01%)	99 (0.01%)	178 (0.01%)
Brain cancer	159 (0.01%)	184 (0.01%)	343 (0.01%)
Multiple myeloma	184 (0.02%)	238 (0.02%)	422 (0.02%)
Other cancer	1089 (0.09%)	1463 (0.10%)	2552 (0.10%)
Unknown cancer site	226 (0.02%)	320 (0.02%)	546 (0.02%)
<b>Total cancer deaths</b>	5579 (0.47%)	7699 (0.51%)	13278 (0.50%)
<b>Accident/injury</b>			
Homicide	15 (<0.01%)	18 (<0.01%)	33 (<0.01%)
Accident	498 (0.04%)	648 (0.04%)	1146 (0.04%)
Suicide	26 (<0.01%)	45 (<0.01%)	71 (<0.01%)
Other injury	24 (<0.01%)	30 (<0.01%)	54 (<0.01%)
<b>Total accident/injury deaths</b>	563 (0.05%)	741 (0.05%)	1304 (0.05%)

<sup>1</sup> Excludes deaths that occurred after a participant's consent period.

<sup>2</sup> Includes SRC Cohort participants.



**Table 2.8 (continued)**  
**Cause of Death Excluding Discovered Deaths Among Non-Extension Study Participants<sup>1</sup> (Annualized Percentages):**  
**CT and OS Participants**

Data as of: March 6, 2021; Events through March 6, 2021

	<b>CT</b>		<b>OS</b>		<b>Total</b>	
<b>Number of participants</b>	68132		93676		161808	
<b>Mean follow-up (months)</b>	207.7		192.3		198.8	
<b>Other</b>						
Alzheimer's disease	888	(0.08%)	1232	(0.08%)	2120	(0.08%)
COPD	806	(0.07%)	1021	(0.07%)	1827	(0.07%)
Pneumonia	549	(0.05%)	626	(0.04%)	1175	(0.04%)
Pulmonary fibrosis	248	(0.02%)	285	(0.02%)	533	(0.02%)
Renal failure	330	(0.03%)	419	(0.03%)	749	(0.03%)
Sepsis	492	(0.04%)	574	(0.04%)	1066	(0.04%)
Dementia, other than Alzheimer's	912	(0.08%)	1163	(0.08%)	2075	(0.08%)
Amyotrophic lateral sclerosis	93	(0.01%)	129	(0.01%)	222	(0.01%)
Parkinson's	206	(0.02%)	325	(0.02%)	531	(0.02%)
Hepatic cirrhosis	110	(0.01%)	120	(0.01%)	230	(0.01%)
COVID-19	22	(<0.01%)	25	(<0.01%)	47	(<0.01%)
Other known cause	1772	(0.15%)	3043	(0.20%)	4815	(0.18%)
Unknown cause	898	(0.08%)	1695	(0.11%)	2593	(0.10%)
<b>Total other cause deaths</b>	<b>7326</b>	<b>(0.62%)</b>	<b>10657</b>	<b>(0.71%)</b>	<b>17983</b>	<b>(0.67%)</b>

<sup>1</sup> Excludes deaths that occurred after a participant's consent period.

**Table 3.1**  
**Verified Outcomes (Annualized Percentages) by Age at Enrollment for MRC Super Cohort Participants<sup>1</sup>**

Data as of: March 6, 2021; Events through March 6, 2021

Outcomes	Total	Age at Enrollment			
		50-54	55-59	60-69	70-79
<b>Number randomized</b>	44174	6788	9352	19418	8616
<b>Mean follow-up (months)</b>	185.8	200.7	201.1	186.8	155.2
<b>Cardiovascular</b>					
CHD <sup>2</sup>	3838 (0.56%)	267 (0.24%)	487 (0.31%)	1832 (0.61%)	1252 (1.12%)
CHD death <sup>3</sup>	1771 (0.26%)	80 (0.07%)	160 (0.10%)	796 (0.26%)	735 (0.66%)
Clinical MI	2558 (0.37%)	201 (0.18%)	372 (0.24%)	1260 (0.42%)	725 (0.65%)
Angina <sup>4</sup>	1625 (0.47%)	114 (0.20%)	226 (0.30%)	785 (0.52%)	500 (0.76%)
CABG/PTCA	3111 (0.45%)	260 (0.23%)	530 (0.34%)	1594 (0.53%)	727 (0.65%)
Carotid artery disease	531 (0.08%)	27 (0.02%)	86 (0.05%)	287 (0.09%)	131 (0.12%)
Congestive heart failure, WHI <sup>4</sup>	1246 (0.36%)	84 (0.15%)	145 (0.19%)	531 (0.35%)	486 (0.74%)
Heart failure, UNC <sup>5</sup>	3231 (0.63%)	202 (0.26%)	381 (0.33%)	1543 (0.67%)	1105 (1.23%)
Stroke	3164 (0.46%)	217 (0.19%)	401 (0.26%)	1557 (0.52%)	989 (0.89%)
PAD	710 (0.10%)	48 (0.04%)	118 (0.08%)	364 (0.12%)	180 (0.16%)
DVT	1379 (0.20%)	129 (0.11%)	254 (0.16%)	661 (0.22%)	335 (0.30%)
Pulmonary embolism	1132 (0.17%)	121 (0.11%)	214 (0.14%)	533 (0.18%)	264 (0.24%)
DVT/PE	2017 (0.29%)	195 (0.17%)	375 (0.24%)	969 (0.32%)	478 (0.43%)
Coronary disease <sup>6</sup>	7897 (1.15%)	602 (0.53%)	1124 (0.72%)	3764 (1.25%)	2407 (2.16%)
Aortic aneurysm <sup>7</sup>	77 (0.04%)	6 (0.02%)	11 (0.02%)	48 (0.06%)	12 (0.06%)
Valvular heart disease <sup>7</sup>	550 (0.30%)	39 (0.11%)	86 (0.18%)	310 (0.38%)	115 (0.56%)
<b>Total cardiovascular disease<sup>8</sup></b>	11120 (1.63%)	821 (0.72%)	1588 (1.01%)	5321 (1.76%)	3390 (3.04%)
<b>Cancer</b>					
Breast cancer	3042 (0.44%)	475 (0.42%)	700 (0.45%)	1370 (0.45%)	497 (0.45%)
Invasive breast cancer	2505 (0.37%)	373 (0.33%)	574 (0.37%)	1120 (0.37%)	438 (0.39%)
In-situ breast cancer	595 (0.09%)	109 (0.10%)	137 (0.09%)	282 (0.09%)	67 (0.06%)
Ovarian cancer	289 (0.04%)	30 (0.03%)	62 (0.04%)	145 (0.05%)	52 (0.05%)
Endometrial cancer <sup>9</sup>	342 (0.09%)	55 (0.09%)	90 (0.10%)	145 (0.08%)	52 (0.08%)
Colorectal cancer	983 (0.14%)	93 (0.08%)	154 (0.10%)	486 (0.16%)	250 (0.22%)
Other cancer <sup>10</sup>	4446 (0.65%)	441 (0.39%)	831 (0.53%)	2179 (0.72%)	995 (0.89%)
<b>Total cancer</b>	8409 (1.23%)	1015 (0.89%)	1710 (1.09%)	3977 (1.32%)	1707 (1.53%)
<b>Fractures</b>					
Hip fracture	1724 (0.25%)	66 (0.06%)	170 (0.11%)	783 (0.26%)	705 (0.63%)
<b>Deaths</b>					
Cardiovascular deaths	4093 (0.60%)	173 (0.15%)	381 (0.24%)	1842 (0.61%)	1697 (1.52%)
Cancer deaths	3361 (0.49%)	279 (0.25%)	545 (0.35%)	1659 (0.55%)	878 (0.79%)
Other known cause	4062 (0.59%)	204 (0.18%)	438 (0.28%)	1948 (0.64%)	1472 (1.32%)
Unknown cause	167 (0.02%)	10 (0.01%)	29 (0.02%)	84 (0.03%)	44 (0.04%)
Not yet adjudicated	413 (0.06%)	26 (0.02%)	66 (0.04%)	231 (0.08%)	90 (0.08%)
<b>Total death<sup>11</sup></b>	19430 (2.21%)	1081 (0.71%)	2324 (1.14%)	9096 (2.36%)	6929 (4.93%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>2</sup> "CHD" includes clinical MI, evolving Q-wave MI, and CHD death; Q-wave MI is not collected in the WHI Extension Studies 2005-2025.

<sup>3</sup> "CHD death" includes definite and possible CHD death.

<sup>4</sup> Angina and CHF are not verified outcomes in the WHI Extension Studies 2005-2025. Reported statistics represent experience during the original program.

<sup>5</sup> Definite or possible decompensated heart failure adjudicated by UNC.

<sup>6</sup> "Coronary disease" includes clinical MI, evolving Q-wave MI, possible evolving Q-wave MI, CHD death, angina, congestive heart failure, UNC heart failure, and CABG/PTCA; Q-wave MI, angina, and congestive heart failure are not collected in the WHI Extension Studies 2005-2025.

<sup>7</sup> Aortic aneurysm and valvular heart disease are new adjudicated outcomes during the WHI Extension Study 2010-2025.

<sup>8</sup> Total CVD does not include aortic aneurysm or valvular heart disease.

<sup>9</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

<sup>10</sup> Only one report of "other cancer" is counted per woman; however, the first of each type is adjudicated. Excludes non-melanoma skin cancer.

<sup>11</sup> Includes deaths for non-Extension study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.

**Table 3.2**  
**Verified Outcomes (Annualized Percentages) by Race/Ethnicity for MRC Super Cohort Participants<sup>1</sup>**

Data as of: March 6, 2021; Events through March 6, 2021

Outcomes	Race/Ethnicity						
	American Indian/ Alaska Native	Asian or Native Hawaiian/ Other Pacific Islander <sup>2</sup>	Hispanic/ Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/ Not Reported
<b>Number randomized</b>	108	526	6525	14025	22278	550	162
<b>Mean follow-up (months)</b>	167.3	179.3	161.5	169.1	203.3	206.9	163.9
<b>Cardiovascular</b>							
CHD <sup>3</sup>	8 (0.53%)	34 (0.43%)	274 (0.31%)	1048 (0.53%)	2407 (0.64%)	50 (0.53%)	17 (0.77%)
CHD death <sup>4</sup>	4 (0.27%)	12 (0.15%)	104 (0.12%)	572 (0.29%)	1044 (0.28%)	24 (0.25%)	11 (0.50%)
Clinical MI	6 (0.40%)	27 (0.34%)	201 (0.23%)	619 (0.31%)	1663 (0.44%)	33 (0.35%)	9 (0.41%)
Angina <sup>5</sup>	7 (0.85%)	16 (0.39%)	160 (0.33%)	532 (0.49%)	886 (0.49%)	16 (0.35%)	8 (0.67%)
CABG/PTCA	7 (0.46%)	23 (0.29%)	298 (0.34%)	742 (0.38%)	1996 (0.53%)	36 (0.38%)	9 (0.41%)
Carotid artery disease	4 (0.27%)	3 (0.04%)	26 (0.03%)	94 (0.05%)	396 (0.10%)	7 (0.07%)	1 (0.05%)
Congestive heart failure, WHI <sup>5</sup>	2 (0.24%)	9 (0.22%)	93 (0.19%)	466 (0.43%)	658 (0.36%)	15 (0.33%)	3 (0.25%)
Heart failure, UNC <sup>6</sup>	9 (0.79%)	22 (0.28%)	196 (0.22%)	816 (2.02%)	2128 (0.58%)	49 (0.89%)	11 (1.04%)
Stroke	7 (0.46%)	22 (0.28%)	247 (0.28%)	905 (0.46%)	1920 (0.51%)	50 (0.53%)	13 (0.59%)
PAD	1 (0.07%)	7 (0.09%)	40 (0.05%)	248 (0.13%)	401 (0.11%)	10 (0.11%)	3 (0.14%)
DVT	5 (0.33%)	2 (0.03%)	84 (0.10%)	369 (0.19%)	897 (0.24%)	17 (0.18%)	5 (0.23%)
Pulmonary embolism	5 (0.33%)	2 (0.03%)	52 (0.06%)	339 (0.17%)	715 (0.19%)	14 (0.15%)	5 (0.23%)
DVT/PE	8 (0.53%)	3 (0.04%)	114 (0.13%)	579 (0.29%)	1279 (0.34%)	26 (0.27%)	8 (0.36%)
Coronary disease <sup>7</sup>	19 (1.26%)	64 (0.81%)	630 (0.72%)	2215 (1.12%)	4836 (1.28%)	102 (1.08%)	31 (1.40%)
Aortic aneurysm <sup>8</sup>	0 (0.00%)	2 (0.10%)	5 (0.02%)	19 (0.04%)	48 (0.04%)	3 (0.11%)	0 (0.00%)
Valvular heart disease <sup>8</sup>	0 (0.00%)	4 (0.20%)	53 (0.25%)	71 (0.15%)	412 (0.38%)	9 (0.34%)	1 (0.17%)
<b>Total cardiovascular disease<sup>9</sup></b>	24 (1.59%)	90 (1.15%)	882 (1.00%)	3161 (1.60%)	6764 (1.79%)	157 (1.66%)	42 (1.90%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants from the CT and OS (identified from race/ethnicity collected on Form 2 at baseline. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

<sup>2</sup> Native Hawaiian/Other Pacific Islander MRC Super Cohort participants (n=40) are combined with Asian MRC Super Cohort participants for reporting purposes due to small numbers.

<sup>3</sup> "CHD" includes clinical MI, evolving Q-wave MI, and CHD death; Q-wave MI is not collected in the WHI Extension Studies 2005-2025.

<sup>4</sup> "CHD death" includes definite and possible CHD death.

<sup>5</sup> Angina and CHF are not verified outcomes in the WHI Extension Studies 2005-2025. Reported statistics represent experience during the original program.

<sup>6</sup> Definite or possible decompensated heart failure adjudicated by UNC.

<sup>7</sup> "Coronary disease" includes clinical MI, evolving Q-wave MI, possible evolving Q-wave MI, CHD death, angina, congestive heart failure, UNC heart failure, and CABG/PTCA; Q-wave MI, angina and congestive heart failure are not collected in the WHI Extension Studies 2005-2025.

<sup>8</sup> Aortic aneurysm and valvular heart disease are new adjudicated outcomes during the WHI Extension Study 2010-2025.

<sup>9</sup> Total CVD does not include aortic aneurysm or valvular heart disease.

**Table 3.2 (continued)**  
**Verified Outcomes (Annualized Percentages) by Race/Ethnicity for MRC Super Cohort Participants<sup>1</sup>**

Data as of: March 6, 2021; Events through March 6, 2021

Outcomes	Race/Ethnicity						
	American Indian/ Alaska Native	Asian or Native Hawaiian/ Other Pacific Islander <sup>2</sup>	Hispanic/ Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/ Not Reported
<b>Number randomized</b>	108	526	6525	14025	22278	550	162
<b>Mean follow-up (months)</b>	167.3	179.3	161.5	169.1	203.3	206.9	163.9
Breast cancer	6 (0.40%)	35 (0.45%)	322 (0.37%)	917 (0.46%)	1715 (0.45%)	39 (0.41%)	8 (0.36%)
Invasive breast cancer	6 (0.40%)	27 (0.34%)	264 (0.30%)	738 (0.37%)	1429 (0.38%)	33 (0.35%)	8 (0.36%)
In situ breast cancer	0 (0.00%)	9 (0.11%)	64 (0.07%)	203 (0.10%)	313 (0.08%)	6 (0.06%)	0 (0.00%)
Ovarian cancer	2 (0.13%)	2 (0.03%)	37 (0.04%)	75 (0.04%)	168 (0.04%)	4 (0.04%)	1 (0.05%)
Endometrial cancer <sup>3</sup>	2 (0.26%)	2 (0.04%)	32 (0.07%)	88 (0.10%)	216 (0.09%)	1 (0.02%)	1 (0.08%)
Colorectal cancer	1 (0.07%)	13 (0.17%)	86 (0.10%)	296 (0.15%)	566 (0.15%)	17 (0.18%)	4 (0.18%)
Other cancer <sup>4</sup>	13 (0.86%)	51 (0.65%)	382 (0.44%)	1088 (0.55%)	2848 (0.75%)	52 (0.55%)	12 (0.54%)
<b>Total cancer</b>	22 (1.46%)	97 (1.23%)	802 (0.91%)	2280 (1.15%)	5077 (1.35%)	106 (1.12%)	25 (1.13%)
<b>Fractures</b>							
Hip fracture	3 (0.20%)	11 (0.14%)	80 (0.09%)	140 (0.07%)	1465 (0.39%)	21 (0.22%)	4 (0.18%)
<b>Deaths</b>							
Cardiovascular deaths	6 (0.40%)	25 (0.32%)	258 (0.29%)	1205 (0.61%)	2533 (0.67%)	48 (0.51%)	18 (0.81%)
Cancer deaths	9 (0.60%)	36 (0.46%)	310 (0.35%)	966 (0.49%)	1988 (0.53%)	38 (0.40%)	14 (0.63%)
Other known cause	11 (0.73%)	34 (0.43%)	309 (0.35%)	925 (0.47%)	2723 (0.72%)	49 (0.52%)	11 (0.50%)
Unknown cause	0 (0.00%)	5 (0.06%)	17 (0.02%)	38 (0.02%)	100 (0.03%)	6 (0.06%)	1 (0.05%)
Not yet adjudicated	1 (0.07%)	2 (0.03%)	25 (0.03%)	115 (0.06%)	266 (0.07%)	4 (0.04%)	0 (0.00%)
<b>Total death<sup>5</sup></b>	47 (2.24%)	200 (1.87%)	1942 (1.43%)	5965 (2.16%)	10976 (2.48%)	233 (2.04%)	67 (2.15%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants from the CT and OS (identified from race/ethnicity collected on Form 2 at baseline. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

<sup>2</sup> Native Hawaiian/Other Pacific Islander MRC Super Cohort participants (n=40) are combined with Asian MRC Super Cohort participants for reporting purposes due to small numbers.

<sup>3</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

<sup>4</sup> Only one report of "other cancer" is counted per woman; however, the first of each type is adjudicated. Excludes non-melanoma skin cancer.

<sup>5</sup> Includes deaths for non-Extension study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.

**Table 3.3**  
**Verified Outcomes (Annualized Percentages)<sup>1</sup> by Age at Diagnosis for MRC Super Cohort Participants<sup>2</sup>**

Data as of: March 6, 2021; Events between January 1, 2000 and December 31, 2019

Outcomes	Age at Diagnosis									
	50-59	60-64	65-69	70-74	75-79	80-84	85-89	90-104		
<b>Number of participants<sup>3</sup></b>	8898	18159	24974	29139	28631	21228	11812	4840		
<b>Mean follow-up (months)</b>	32.0	39.0	44.4	47.2	46.9	45.3	41.1	38.6		
<b>Cancer</b>										
Breast cancer	95 (0.40%)	269 (0.46%)	427 (0.46%)	615 (0.54%)	538 (0.48%)	366 (0.46%)	141 (0.35%)	41 (0.26%)		
Invasive breast cancer	73 (0.31%)	211 (0.36%)	315 (0.34%)	515 (0.45%)	453 (0.40%)	319 (0.40%)	132 (0.33%)	40 (0.26%)		
In situ breast cancer	22 (0.09%)	62 (0.11%)	114 (0.12%)	115 (0.10%)	101 (0.09%)	60 (0.07%)	13 (0.03%)	2 (0.01%)		
Ovarian cancer	5 (0.02%)	15 (0.03%)	43 (0.05%)	52 (0.05%)	52 (0.05%)	48 (0.06%)	17 (0.04%)	8 (0.05%)		
Endometrial cancer <sup>4</sup>	3 (0.01%)	33 (0.06%)	69 (0.07%)	76 (0.07%)	52 (0.05%)	37 (0.05%)	16 (0.04%)	6 (0.04%)		
Colorectal cancer	10 (0.04%)	57 (0.10%)	117 (0.13%)	159 (0.14%)	172 (0.15%)	121 (0.15%)	85 (0.21%)	47 (0.30%)		
Leukemia	1 (<0.01%)	13 (0.02%)	25 (0.03%)	54 (0.05%)	46 (0.04%)	62 (0.08%)	35 (0.09%)	16 (0.10%)		
Lung cancer	18 (0.08%)	67 (0.11%)	123 (0.13%)	221 (0.19%)	265 (0.24%)	205 (0.26%)	105 (0.26%)	46 (0.30%)		
Non-Hodgkin's lymphoma	3 (0.01%)	14 (0.02%)	43 (0.05%)	80 (0.07%)	82 (0.07%)	82 (0.10%)	49 (0.12%)	18 (0.12%)		
Melanoma of the skin	10 (0.04%)	30 (0.05%)	43 (0.05%)	68 (0.06%)	82 (0.07%)	58 (0.07%)	44 (0.11%)	13 (0.08%)		
Pancreas cancer	5 (0.02%)	10 (0.02%)	35 (0.04%)	57 (0.05%)	77 (0.07%)	67 (0.08%)	52 (0.13%)	17 (0.11%)		
Total cancer	167 (0.70%)	595 (1.01%)	1058 (1.14%)	1555 (1.36%)	1559 (1.39%)	1180 (1.47%)	599 (1.48%)	230 (1.48%)		
<b>Cardiovascular</b>										
CHD <sup>5</sup>	35 (0.15%)	132 (0.22%)	330 (0.36%)	520 (0.45%)	699 (0.62%)	722 (0.90%)	531 (1.31%)	364 (2.34%)		
Clinical MI	25 (0.11%)	98 (0.17%)	249 (0.27%)	399 (0.35%)	498 (0.45%)	482 (0.60%)	290 (0.72%)	131 (0.84%)		
CABG/PTCA	48 (0.20%)	180 (0.31%)	418 (0.45%)	582 (0.51%)	643 (0.57%)	481 (0.60%)	176 (0.44%)	36 (0.23%)		
Stroke	26 (0.11%)	101 (0.17%)	214 (0.23%)	418 (0.36%)	597 (0.53%)	684 (0.85%)	464 (1.15%)	274 (1.76%)		
Total cardiovascular <sup>6</sup>	157 (0.66%)	497 (0.84%)	1046 (1.13%)	1585 (1.38%)	1989 (1.78%)	1897 (2.37%)	1198 (2.96%)	758 (4.87%)		
<b>Deaths</b>										
Total death <sup>7</sup>	88 (0.37%)	372 (0.63%)	907 (0.98%)	1775 (1.55%)	3043 (2.72%)	4017 (5.01%)	4160 (10.28%)	3768 (24.20%)		

<sup>1</sup>Annualized percentages calculated as the number with an event in the age interval divided by the total person years of all participants with time in the interval.

<sup>2</sup>The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>3</sup>Number of participants with any follow-up time in the age interval.

<sup>4</sup>Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

<sup>5</sup>"CHD" includes clinical MI, evolving Q-wave MI, and CHD death; Q-wave MI is not collected in the OS or in in the WHI Extension Study 2005-2010.

<sup>6</sup>Total cardiovascular disease includes CHD, angina, CABG/PTCA, carotid artery disease, WHI CHF, UNC HF, stroke, PVD and CVD death. Angina and WHI CHF are not verified outcomes in the WHI Extension Studies 2005-2025.

<sup>7</sup>Includes deaths for non-Extension study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.

**Table 3.4**  
**Verified Outcomes (Annualized Percentages) by Age at Enrollment for SRC Super Cohort Participants<sup>1</sup>**

Data as of: March 6, 2021; Events through September 30, 2010 and March 6, 2021

	Age at Enrollment				
	Total	50-54	55-59	60-69	70-79
<b>Outcomes through Extension Study 2005-2010</b>					
Number randomized	117634	14781	22638	53171	27044
Mean follow-up (months)	142.7	154.9	151.9	142.9	128.1
<b>Cardiovascular<sup>2</sup></b>					
CHD <sup>3</sup>	5434 (0.39%)	201 (0.11%)	489 (0.17%)	2362 (0.37%)	2382 (0.83%)
CHD death <sup>4</sup>	1891 (0.14%)	49 (0.03%)	104 (0.04%)	693 (0.11%)	1045 (0.36%)
Clinical MI	4044 (0.29%)	159 (0.08%)	398 (0.14%)	1834 (0.29%)	1653 (0.57%)
Angina <sup>5</sup>	3623 (0.38%)	139 (0.11%)	423 (0.22%)	1749 (0.41%)	1312 (0.63%)
CABG/PTCA	6113 (0.44%)	241 (0.13%)	711 (0.25%)	3161 (0.50%)	2000 (0.69%)
Carotid artery disease	1111 (0.08%)	48 (0.03%)	117 (0.04%)	520 (0.08%)	426 (0.15%)
Congestive heart failure, WHI <sup>5</sup>	2797 (0.29%)	78 (0.06%)	201 (0.11%)	1096 (0.26%)	1422 (0.68%)
Stroke	4255 (0.30%)	124 (0.06%)	319 (0.11%)	1856 (0.29%)	1956 (0.68%)
PAD	984 (0.07%)	24 (0.01%)	88 (0.03%)	460 (0.07%)	412 (0.14%)
Coronary disease <sup>6</sup>	11771 (0.84%)	455 (0.24%)	1244 (0.43%)	5456 (0.86%)	4616 (1.60%)
<b>Total cardiovascular disease</b>	<b>16773 (1.20%)</b>	<b>626 (0.33%)</b>	<b>1662 (0.58%)</b>	<b>7667 (1.21%)</b>	<b>6818 (2.36%)</b>
<b>Fractures<sup>2</sup></b>					
Hip fracture	2955 (0.21%)	63 (0.03%)	186 (0.06%)	1108 (0.18%)	1598 (0.55%)
<b>Outcomes through Extension Study 2010-2025</b>					
Number randomized	117634	14781	22638	53171	27044
Mean follow-up (months)	203.7	237.0	230.6	205.2	159.8
<b>Cancer</b>					
Breast cancer	10866 (0.54%)	1482 (0.51%)	2349 (0.54%)	5029 (0.55%)	2006 (0.56%)
Invasive breast cancer	9145 (0.46%)	1199 (0.41%)	1969 (0.45%)	4252 (0.47%)	1725 (0.48%)
In situ breast cancer	1902 (0.10%)	313 (0.11%)	418 (0.10%)	865 (0.10%)	306 (0.08%)
Ovarian cancer	1052 (0.05%)	130 (0.04%)	202 (0.05%)	501 (0.06%)	219 (0.06%)
Endometrial cancer <sup>7</sup>	1544 (0.13%)	183 (0.10%)	350 (0.13%)	711 (0.13%)	300 (0.15%)
Colorectal cancer	2518 (0.13%)	152 (0.05%)	351 (0.08%)	1245 (0.14%)	770 (0.21%)
Other cancer <sup>8</sup>	14298 (0.72%)	1427 (0.49%)	2503 (0.58%)	7018 (0.77%)	3350 (0.93%)
<b>Total cancer</b>	<b>27532 (1.38%)</b>	<b>3082 (1.06%)</b>	<b>5241 (1.20%)</b>	<b>13094 (1.44%)</b>	<b>6115 (1.70%)</b>
<b>Deaths</b>					
Cardiovascular deaths	10652 (0.53%)	236 (0.08%)	678 (0.16%)	4515 (0.50%)	5223 (1.45%)
Cancer deaths	9917 (0.50%)	646 (0.22%)	1403 (0.32%)	4915 (0.54%)	2953 (0.82%)
Other known cause	12632 (0.63%)	404 (0.14%)	1102 (0.25%)	5996 (0.66%)	5130 (1.42%)
Unknown cause	2426 (0.12%)	117 (0.04%)	268 (0.06%)	1371 (0.15%)	670 (0.19%)
<b>Total death<sup>9</sup></b>	<b>52547 (2.22%)</b>	<b>1910 (0.56%)</b>	<b>4631 (0.91%)</b>	<b>23944 (2.23%)</b>	<b>22062 (5.01%)</b>

<sup>1</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown Race/Ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study.

<sup>2</sup> Cardiovascular diseases and hip fracture are not adjudicated for SRC Super Cohort participants during the WHI Extension Study 2010-2025. Reported statistics represent experience during the original program and the Extension Study 2005-2010.

<sup>3</sup> "CHD" includes clinical MI, evolving Q-wave MI, and CHD death; Q-wave MI is not collected in the WHI Extension Study 2005-2010.

<sup>4</sup> "CHD death" includes definite and possible CHD death.

<sup>5</sup> Angina and CHF are not verified outcomes in the WHI Extension Study 2005-2010. Reported statistics represent experience during the original program.

<sup>6</sup> "Coronary disease" includes clinical MI, evolving Q-wave MI, possible evolving Q-wave MI, CHD death, angina, congestive heart failure, and CABG/PTCA; Q-wave MI, angina, and congestive heart failure were not collected in the WHI Extension Study 2005-2010.

<sup>7</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

<sup>8</sup> Only one report of "other cancer" is counted per woman; however, the first of each type is adjudicated. Excludes non-melanoma skin cancer.

<sup>9</sup> Includes deaths for non-Extension study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.

**Table 3.5**  
**Verified Outcomes (Annualized Percentages) by Race/Ethnicity for SRC Super Cohort Participants<sup>1</sup>**

Data as of: March 6, 2021; Events through September 30, 2010 and March 6, 2021

	Race/Ethnicity						
	American Indian/ Alaska Native	Asian or Native Hawaiian/ Other Pacific Islander <sup>2</sup>	Hispanic/ Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/Not Reported
<b>Outcomes through Extension Study 2005-2010</b>							
<b>Number randomized</b>	379	3558	787	142	111050	1119	599
<b>Mean follow-up (months)</b>	115.0	127.6	145.7	137.6	143.4	146.6	106.7
<b>Cardiovascular<sup>3</sup></b>							
CHD <sup>4</sup>	21 (0.58%)	89 (0.24%)	27 (0.28%)	3 (0.18%)	5224 (0.39%)	42 (0.31%)	28 (0.53%)
CHD death <sup>5</sup>	11 (0.30%)	30 (0.08%)	4 (0.04%)	1 (0.06%)	1812 (0.14%)	13 (0.10%)	20 (0.38%)
Clinical MI	13 (0.36%)	68 (0.18%)	23 (0.24%)	2 (0.12%)	3889 (0.29%)	31 (0.23%)	18 (0.34%)
Angina <sup>6</sup>	19 (0.70%)	54 (0.20%)	28 (0.43%)	2 (0.17%)	3470 (0.39%)	35 (0.38%)	15 (0.37%)
CABG/PTCA	19 (0.52%)	80 (0.21%)	39 (0.41%)	2 (0.12%)	5906 (0.44%)	47 (0.34%)	20 (0.38%)
Carotid artery disease	6 (0.17%)	10 (0.03%)	11 (0.12%)	4 (0.25%)	1065 (0.08%)	8 (0.06%)	7 (0.13%)
Congestive heart failure, WHI <sup>6</sup>	19 (0.70%)	33 (0.12%)	12 (0.18%)	2 (0.17%)	2684 (0.30%)	23 (0.25%)	24 (0.59%)
Stroke	19 (0.52%)	98 (0.26%)	19 (0.20%)	6 (0.37%)	4059 (0.31%)	29 (0.21%)	25 (0.47%)
PAD	5 (0.14%)	9 (0.02%)	3 (0.03%)	3 (0.18%)	949 (0.07%)	13 (0.10%)	2 (0.04%)
Coronary disease <sup>7</sup>	52 (1.43%)	177 (0.47%)	71 (0.74%)	7 (0.43%)	11305 (0.85%)	103 (0.75%)	56 (1.05%)
<b>Total cardiovascular disease</b>	<b>68 (1.87%)</b>	<b>288 (0.76%)</b>	<b>99 (1.04%)</b>	<b>20 (1.23%)</b>	<b>16059 (1.21%)</b>	<b>154 (1.13%)</b>	<b>85 (1.60%)</b>
<b>Fractures<sup>3</sup></b>							
Hip fracture	4 (0.11%)	28 (0.07%)	15 (0.16%)	0 (0.00%)	2868 (0.22%)	26 (0.19%)	14 (0.26%)

<sup>1</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

<sup>2</sup> Native Hawaiian/Other Pacific Islander SRC Super Cohort participants (n=79) are combined with Asian SRC Super Cohort participants for reporting purposes due to small numbers.

<sup>3</sup> Cardiovascular diseases and hip fracture are not adjudicated for SRC Super Cohort participants during the WHI Extension Study 2010-2025. Reported statistics represent experience during the original program and the Extension Study 2005-2010.

<sup>4</sup> "CHD" includes clinical MI, evolving Q-wave MI, and CHD death; Q-wave MI is not collected in the WHI Extension Study 2005-2010.

<sup>5</sup> "CHD death" includes definite and possible CHD death.

<sup>6</sup> Angina and CHF are not verified outcomes in the WHI Extension Study 2005-2010. Reported statistics represent experience during the original program.

<sup>7</sup> "Coronary disease" includes clinical MI, evolving Q-wave MI, possible evolving Q-wave MI, CHD death, angina, congestive heart failure, and CABG/PTCA; Q-wave MI, angina and congestive heart failure were not collected in the WHI Extension Study 2005-2010.

**Table 3.5 (continued)**  
**Verified Outcomes (Annualized Percentages) by Race/Ethnicity for SRC Super Cohort Participants<sup>1</sup>**  
 Data as of: March 6, 2021; Events through September 30, 2010 and March 6, 2021

	Race/Ethnicity						
	American Indian/Alaska Native	Asian or Native Hawaiian/Other Pacific Islander <sup>2</sup>	Hispanic/Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/Not Reported
<b>Outcomes through Extension Study 2010-2025</b>							
<b>Number randomized</b>	379	3558	787	142	111050	1119	599
<b>Mean follow-up (months)</b>	150.9	174.2	207.9	188.0	205.1	208.8	136.1
<b>Cancer</b>							
Breast Cancer	20 (0.42%)	241 (0.47%)	68 (0.50%)	10 (0.45%)	10410 (0.55%)	82 (0.42%)	35 (0.52%)
Invasive breast cancer	17 (0.36%)	197 (0.38%)	54 (0.40%)	8 (0.36%)	8768 (0.46%)	73 (0.37%)	28 (0.41%)
In situ breast cancer	4 (0.08%)	47 (0.09%)	15 (0.11%)	2 (0.09%)	1815 (0.10%)	11 (0.06%)	8 (0.12%)
Ovarian cancer	3 (0.06%)	14 (0.03%)	3 (0.02%)	1 (0.04%)	1016 (0.05%)	6 (0.03%)	9 (0.13%)
Endometrial cancer <sup>3</sup>	1 (0.04%)	24 (0.07%)	12 (0.14%)	2 (0.19%)	1492 (0.13%)	10 (0.10%)	3 (0.07%)
Colorectal cancer	8 (0.17%)	44 (0.09%)	18 (0.13%)	3 (0.13%)	2421 (0.13%)	15 (0.08%)	9 (0.13%)
Other cancer <sup>4</sup>	31 (0.65%)	231 (0.45%)	66 (0.48%)	14 (0.63%)	13790 (0.73%)	103 (0.53%)	63 (0.93%)
<b>Total cancer</b>	59 (1.24%)	510 (0.99%)	145 (1.06%)	25 (1.12%)	26478 (1.40%)	204 (1.05%)	111 (1.63%)
<b>Deaths</b>							
Cardiovascular deaths	31 (0.65%)	180 (0.35%)	47 (0.34%)	10 (0.45%)	10250 (0.54%)	77 (0.40%)	57 (0.84%)
Cancer deaths	26 (0.55%)	177 (0.34%)	27 (0.20%)	5 (0.22%)	9565 (0.50%)	60 (0.31%)	57 (0.84%)
Other known cause	50 (1.05%)	169 (0.33%)	80 (0.59%)	5 (0.22%)	12171 (0.64%)	108 (0.55%)	49 (0.72%)
Unknown cause	5 (0.10%)	32 (0.06%)	12 (0.09%)	3 (0.13%)	2349 (0.12%)	23 (0.12%)	2 (0.03%)
<b>Total death<sup>5</sup></b>	187 (2.72%)	1172 (1.59%)	296 (1.78%)	51 (1.75%)	50100 (2.25%)	428 (1.83%)	313 (2.97%)

<sup>1</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

<sup>2</sup> Native Hawaiian/Other Pacific Islander SRC Super Cohort participants (n=79) are combined with Asian SRC Super Cohort participants for reporting purposes due to small numbers.

<sup>3</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

<sup>4</sup> Only one report of "other cancer" is counted per woman; however, the first of each type is adjudicated. Excludes non-melanoma skin cancer.

<sup>5</sup> Includes deaths for non-Extension study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.



**Table 3.6**  
**Verified Primary and Other Cancers (Annualized Percentages): MRC and SRC Super Cohort Participants**

Data as of: March 6, 2021; Events through March 6, 2021

	MRC Super Cohort <sup>1</sup>		SRC Super Cohort <sup>2</sup>	
<b>Number of participants</b>	44174		117634	
<b>Mean follow-up (months)</b>	185.8		203.7	
<b>Overall cancer</b>	8394	(1.23%)	27504	(1.38%)
<b>Primary cancer</b>				
Breast cancer	3042	(0.44%)	10866	(0.54%)
Invasive breast cancer	2505	(0.37%)	9145	(0.46%)
In situ breast cancer	595	(0.09%)	1902	(0.10%)
Ovarian cancer	289	(0.04%)	1052	(0.05%)
Endometrial cancer <sup>3</sup>	342	(0.09%)	1544	(0.13%)
Colorectal cancer	983	(0.14%)	2518	(0.13%)
<b>Other cancer</b>				
Accessory sinus	3	(<0.01%)	13	(<0.01%)
Adrenal gland	5	(<0.01%)	12	(<0.01%)
Anus	32	(<0.01%)	105	(0.01%)
Appendix	13	(<0.01%)	36	(<0.01%)
Base of tongue	9	(<0.01%)	26	(<0.01%)
Biliary tract, parts of (other/unspecified)	62	(0.01%)	146	(0.01%)
Bladder	270	(0.04%)	840	(0.04%)
Bones/joints/articular cartilage (limbs)	2	(<0.01%)	12	(<0.01%)
Bones/joints/articular cartilage (other)	9	(<0.01%)	21	(<0.01%)
Brain	72	(0.01%)	323	(0.02%)
Cervix	45	(0.01%)	89	(<0.01%)
Central Nervous System (excludes brain)	1	(<0.01%)	4	(<0.01%)
Connective/subcutaneous/soft tissues	46	(0.01%)	162	(0.01%)
Endocrine glands, related structures	0	(0.00%)	5	(<0.01%)
Esophagus	48	(0.01%)	146	(0.01%)
Eye and adnexa	24	(<0.01%)	59	(<0.01%)
Floor of Mouth	7	(<0.01%)	11	(<0.01%)
Gallbladder	47	(0.01%)	103	(0.01%)
Genital organs	84	(0.01%)	323	(0.02%)
Gum	8	(<0.01%)	42	(<0.01%)
Heart	5	(<0.01%)	35	(<0.01%)
Kidney	212	(0.03%)	582	(0.03%)
Larynx	21	(<0.01%)	34	(<0.01%)
Leukemia	279	(0.04%)	940	(0.05%)
Liver	106	(0.02%)	253	(0.01%)
Lung	1205	(0.18%)	3205	(0.16%)
Lymph nodes	1	(<0.01%)	2	(<0.01%)
Lymphoma, Hodgkins	24	(<0.01%)	58	(<0.01%)
Lymphoma, non-Hodgkins	404	(0.06%)	1535	(0.08%)
Melanoma of the skin	395	(0.06%)	2350	(0.12%)
Meninges	2	(<0.01%)	6	(<0.01%)
Multiple myeloma	216	(0.03%)	464	(0.02%)
Mycosis fungoides	8	(<0.01%)	21	(<0.01%)
Nasal cavity mid ear	2	(<0.01%)	19	(<0.01%)
Oral (mouth)	9	(<0.01%)	36	(<0.01%)
Other digestive cancer	14	(<0.01%)	50	(<0.01%)
Other lip	7	(<0.01%)	9	(<0.01%)
Palate	7	(<0.01%)	27	(<0.01%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>2</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study.

<sup>3</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial and uterine cancer.

**Table 3.6 (continued)**  
**Verified Primary and Other Cancers (Annualized Percentages): MRC and SRC Super Cohort Participants**

Data as of: March 6, 2021; Events through March 6, 2021

	<b>MRC Super Cohort<sup>1</sup></b>		<b>SRC Super Cohort<sup>2</sup></b>	
<b>Number of participants</b>	44174		117634	
<b>Mean follow-up (months)</b>	185.8		203.7	
Pancreas	360	(0.05%)	1020	(0.05%)
Parotid gland (Stensen's duct)	15	(<0.01%)	52	(<0.01%)
Peripheral nerves and autonomic nervous	0	(0.00%)	2	(<0.01%)
Peritoneum	54	(0.01%)	179	(0.01%)
Pharynx	12	(<0.01%)	19	(<0.01%)
Pyramidal sinus	0	(0.00%)	2	(<0.01%)
Renal pelvis	38	(0.01%)	99	(<0.01%)
Respiratory system, intrathoracic, other	0	(0.00%)	3	(<0.01%)
Salivary glands, major (other/unspecified)	4	(<0.01%)	15	(<0.01%)
Small intestine	42	(0.01%)	129	(0.01%)
Stomach	107	(0.02%)	225	(0.01%)
Thymus	3	(<0.01%)	11	(<0.01%)
Thyroid	110	(0.02%)	409	(0.02%)
Tongue, part of (other/unspecified)	15	(<0.01%)	77	(<0.01%)
Tonsil	3	(<0.01%)	20	(<0.01%)
Trachea	1	(<0.01%)	0	(0.00%)
Ureter	20	(<0.01%)	70	(<0.01%)
Urinary organs (other/unspecified)	13	(<0.01%)	27	(<0.01%)
Uterus, not otherwise specified <sup>3</sup>	35	(0.01%)	109	(0.01%)
Other/unknown site of cancer	143	(0.02%)	441	(0.02%)
Other/unknown cancers reported on death form	102	(0.01%)	403	(0.02%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>2</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown race/ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study.

<sup>3</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial and uterine cancer.

**Table 3.7**  
**Verified Outcomes (Annualized Percentages)<sup>1</sup> by Age at Diagnosis for CT and OS Participants**

Data as of: March 6, 2021; Events between January 1, 2000 and December 31, 2019 or January 1, 2000 and September 30, 2010

	Age at Diagnosis							
	50-59	60-64	65-69	70-74	75-79	80-84	85-89	90-104
<b>Cancer and Death Outcomes between 1/1/2000 and 12/31/2019</b>								
<b>Number of participants<sup>2</sup></b>	28496	62321	91040	113164	117144	89762	51545	21690
<b>Mean follow-up (months)</b>	30.9	39.5	45.3	48.2	47.6	46.0	41.5	38.6
Breast cancer	359 (0.49%)	1072 (0.52%)	1908 (0.56%)	2592 (0.57%)	2632 (0.57%)	1715 (0.50%)	716 (0.40%)	202 (0.29%)
Invasive breast cancer	281 (0.38%)	862 (0.42%)	1514 (0.44%)	2151 (0.47%)	2243 (0.48%)	1495 (0.43%)	668 (0.37%)	203 (0.29%)
In situ breast cancer	80 (0.11%)	222 (0.11%)	412 (0.12%)	489 (0.11%)	457 (0.10%)	271 (0.08%)	66 (0.04%)	10 (0.01%)
Ovarian cancer	26 (0.04%)	78 (0.04%)	183 (0.05%)	249 (0.05%)	235 (0.05%)	185 (0.05%)	117 (0.07%)	33 (0.05%)
Endometrial cancer <sup>3</sup>	32 (0.08%)	144 (0.12%)	294 (0.14%)	369 (0.14%)	348 (0.13%)	229 (0.11%)	87 (0.08%)	28 (0.07%)
Colorectal cancer	35 (0.05%)	155 (0.08%)	337 (0.10%)	545 (0.12%)	644 (0.14%)	588 (0.17%)	376 (0.21%)	169 (0.24%)
Leukemia	6 (0.01%)	48 (0.02%)	136 (0.04%)	201 (0.04%)	251 (0.05%)	231 (0.07%)	165 (0.09%)	80 (0.11%)
Lung cancer	33 (0.04%)	177 (0.09%)	401 (0.12%)	777 (0.17%)	985 (0.21%)	830 (0.24%)	446 (0.25%)	187 (0.27%)
Non-Hodgkin's lymphoma	18 (0.02%)	75 (0.04%)	199 (0.06%)	358 (0.08%)	413 (0.09%)	358 (0.10%)	237 (0.13%)	86 (0.12%)
Melanoma of the skin	49 (0.07%)	164 (0.08%)	320 (0.09%)	514 (0.11%)	625 (0.13%)	428 (0.12%)	249 (0.14%)	79 (0.11%)
Pancreas cancer	10 (0.01%)	44 (0.02%)	103 (0.03%)	193 (0.04%)	291 (0.06%)	310 (0.09%)	212 (0.12%)	88 (0.13%)
<b>Total cancer</b>	<b>644 (0.88%)</b>	<b>2185 (1.06%)</b>	<b>4250 (1.24%)</b>	<b>6381 (1.41%)</b>	<b>6961 (1.50%)</b>	<b>5317 (1.55%)</b>	<b>2779 (1.56%)</b>	<b>1022 (1.46%)</b>
<b>Total death<sup>4</sup></b>	<b>221 (0.30%)</b>	<b>999 (0.49%)</b>	<b>2450 (0.71%)</b>	<b>5424 (1.19%)</b>	<b>10123 (2.18%)</b>	<b>14787 (4.30%)</b>	<b>17019 (9.55%)</b>	<b>15806 (22.65%)</b>
<b>Cardiovascular Outcomes between 1/1/2000 and 9/30/2010</b>								
<b>Number of participants<sup>2</sup></b>	22435	50703	75664	80683	65949	40705	15580	2664
<b>Mean follow-up (months)</b>	31.1	41.6	41.9	40.6	40.8	38.3	31.0	17.6
CHD <sup>5</sup>	35 (0.06%)	131 (0.07%)	307 (0.12%)	396 (0.14%)	458 (0.20%)	379 (0.29%)	166 (0.41%)	28 (0.72%)
Clinical MI	25 (0.04%)	97 (0.06%)	231 (0.09%)	298 (0.11%)	326 (0.15%)	248 (0.19%)	95 (0.24%)	11 (0.28%)
CABG/PTCA	48 (0.08%)	178 (0.10%)	395 (0.15%)	479 (0.18%)	465 (0.21%)	288 (0.22%)	58 (0.14%)	0 (0.00%)
Stroke	26 (0.04%)	100 (0.06%)	191 (0.07%)	303 (0.11%)	364 (0.16%)	315 (0.24%)	124 (0.31%)	22 (0.56%)
<b>Total cardiovascular<sup>6</sup></b>	<b>157 (0.27%)</b>	<b>493 (0.28%)</b>	<b>980 (0.37%)</b>	<b>1252 (0.46%)</b>	<b>1342 (0.60%)</b>	<b>999 (0.77%)</b>	<b>344 (0.86%)</b>	<b>58 (1.48%)</b>

<sup>1</sup> Annualized percentages calculated as the number with an event in the age interval divided by the total person years of all participants with time in the interval.

<sup>2</sup> Number of participants with any follow-up time in the age interval.

<sup>3</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

<sup>4</sup> Includes deaths for non-Extension study participants after the main WHI study close-out. Annualized rates incorporate additional follow-up from the NDI search.

<sup>5</sup> "CHD" includes clinical MI, evolving Q-wave MI, and CHD death; Q-wave MI is not collected in the OS or in the WHI Extension Study 2005-2010.

<sup>6</sup> Total cardiovascular disease includes CHD, angina, CABG/PTCA, carotid artery disease, CHF, stroke, PAD and CVD death. Angina and CHF are not verified outcomes in the WHI Extension Study 2005-2010.

**Table 3.8**  
**Verified Primary and Other Cancers (Annualized Percentages): CT and OS Participants**

Data as of: March 6, 2021; Events through March 6, 2021

	CT		OS		Total	
<b>Number of participants</b>	68132		93676		161808	
<b>Mean follow-up (months)</b>	207.7		192.3		198.8	
<b>Overall cancer</b>	15387	(1.30%)	20511	(1.37%)	35898	(1.34%)
<b>Primary cancer</b>						
Breast cancer	5806	(0.49%)	8102	(0.54%)	13908	(0.52%)
Invasive breast cancer	4822	(0.41%)	6828	(0.45%)	11650	(0.43%)
In situ breast cancer	1095	(0.09%)	1402	(0.09%)	2497	(0.09%)
Ovarian cancer	545	(0.05%)	796	(0.05%)	1341	(0.05%)
Endometrial cancer <sup>1</sup>	798	(0.11%)	1088	(0.12%)	1886	(0.12%)
Colorectal cancer	1602	(0.14%)	1899	(0.13%)	3501	(0.13%)
<b>Other cancer</b>						
Accessory sinus	6	(<0.01%)	10	(<0.01%)	16	(<0.01%)
Adrenal gland	7	(<0.01%)	10	(<0.01%)	17	(<0.01%)
Anus	59	(0.01%)	78	(0.01%)	137	(0.01%)
Appendix	25	(<0.01%)	24	(<0.01%)	49	(<0.01%)
Base of tongue	17	(<0.01%)	18	(<0.01%)	35	(<0.01%)
Biliary tract, parts of (other/unspecified)	102	(0.01%)	106	(0.01%)	208	(0.01%)
Bladder	514	(0.04%)	596	(0.04%)	1110	(0.04%)
Bones/joints/articular cartilage (limbs)	7	(<0.01%)	7	(<0.01%)	14	(<0.01%)
Bones/joints/articular cartilage (other)	15	(<0.01%)	15	(<0.01%)	30	(<0.01%)
Brain	174	(0.01%)	221	(0.01%)	395	(0.01%)
Cervix	65	(0.01%)	69	(<0.01%)	134	(<0.01%)
Central Nervous System (excludes brain)	1	(<0.01%)	4	(<0.01%)	5	(<0.01%)
Connective/subcutaneous/soft tissues	97	(0.01%)	111	(0.01%)	208	(0.01%)
Endocrine glands, related structures	1	(<0.01%)	4	(<0.01%)	5	(<0.01%)
Esophagus	88	(0.01%)	106	(0.01%)	194	(0.01%)
Eye and adnexa	48	(<0.01%)	35	(<0.01%)	83	(<0.01%)
Floor of mouth	10	(<0.01%)	8	(<0.01%)	18	(<0.01%)
Gallbladder	85	(0.01%)	65	(<0.01%)	150	(0.01%)
Genital organs	168	(0.01%)	239	(0.02%)	407	(0.02%)
Gum	22	(<0.01%)	28	(<0.01%)	50	(<0.01%)
Heart	12	(<0.01%)	28	(<0.01%)	40	(<0.01%)
Kidney	377	(0.03%)	417	(0.03%)	794	(0.03%)
Larynx	28	(<0.01%)	27	(<0.01%)	55	(<0.01%)
Leukemia	534	(0.05%)	685	(0.05%)	1219	(0.05%)
Liver	152	(0.01%)	207	(0.01%)	359	(0.01%)
Lung	1903	(0.16%)	2507	(0.17%)	4410	(0.16%)
Lymph nodes	2	(<0.01%)	1	(<0.01%)	3	(<0.01%)
Lymphoma, Hodgkins	31	(<0.01%)	51	(<0.01%)	82	(<0.01%)
Lymphoma, non-Hodgkins	807	(0.07%)	1132	(0.08%)	1939	(0.07%)
Melanoma of the skin	1175	(0.10%)	1570	(0.10%)	2745	(0.10%)
Meninges	3	(<0.01%)	5	(<0.01%)	8	(<0.01%)
Multiple myeloma	302	(0.03%)	378	(0.03%)	680	(0.03%)
Mycosis fungoides	10	(<0.01%)	19	(<0.01%)	29	(<0.01%)
Nasal cavity mid ear	8	(<0.01%)	13	(<0.01%)	21	(<0.01%)
Oral (mouth)	24	(<0.01%)	21	(<0.01%)	45	(<0.01%)
Other digestive cancer	31	(<0.01%)	33	(<0.01%)	64	(<0.01%)

<sup>1</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial and uterine cancer.

**Table 3.8 (continued)**  
**Verified Primary and Other Cancers (Annualized Percentages): MRC and SRC Super Cohort Participants**

Data as of: March 6, 2021; Events through March 6, 2021

	CT	OS	Total
<b>Number of participants</b>	68132	93676	161808
<b>Mean follow-up (months)</b>	207.7	192.3	198.8
Other lip	7 (<0.01%)	9 (<0.01%)	16 (<0.01%)
Palate	13 (<0.01%)	21 (<0.01%)	34 (<0.01%)
Pancreas	612 (0.05%)	768 (0.05%)	1380 (0.05%)
Parotid gland (Stensen's duct)	27 (<0.01%)	40 (<0.01%)	67 (<0.01%)
Peripheral nerves and autonomic nervous	1 (<0.01%)	1 (<0.01%)	2 (<0.01%)
Peritoneum	95 (0.01%)	138 (0.01%)	233 (0.01%)
Pharynx	14 (<0.01%)	17 (<0.01%)	31 (<0.01%)
Pyriform sinus	0 (0.00%)	2 (<0.01%)	2 (<0.01%)
Renal pelvis	64 (0.01%)	73 (<0.01%)	137 (0.01%)
Respiratory system, intrathoracic, other	1 (<0.01%)	2 (<0.01%)	3 (<0.01%)
Salivary glands, major (other/unspecified)	6 (<0.01%)	13 (<0.01%)	19 (<0.01%)
Small intestine	60 (0.01%)	111 (0.01%)	171 (0.01%)
Stomach	138 (0.01%)	194 (0.01%)	332 (0.01%)
Thymus	7 (<0.01%)	7 (<0.01%)	14 (<0.01%)
Thyroid	220 (0.02%)	299 (0.02%)	519 (0.02%)
Tongue, part of (other/unspecified)	43 (<0.01%)	49 (<0.01%)	92 (<0.01%)
Tonsil	10 (<0.01%)	13 (<0.01%)	23 (<0.01%)
Trachea	0 (0.00%)	1 (<0.01%)	1 (<0.01%)
Ureter	45 (<0.01%)	45 (<0.01%)	90 (<0.01%)
Urinary organs (other/unspecified)	18 (<0.01%)	22 (<0.01%)	40 (<0.01%)
Uterus, not otherwise specified <sup>1</sup>	61 (0.01%)	83 (0.01%)	144 (0.01%)
Other/unknown site of cancer	259 (0.02%)	325 (0.02%)	584 (0.02%)
Other/unknown cancers reported on death form	169 (0.01%)	336 (0.02%)	505 (0.02%)

<sup>1</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial and uterine cancer.

**Table 3.9**  
**Verified Primary and Other Cancers (Annualized Percentages) by Race/Ethnicity for CT and OS Participants**  
 Data as of: March 6, 2021; Events through March 6, 2021

	Race/Ethnicity							
	American Indian/ Alaska Native	Asian or Native Hawaiian/ Other Pacific Islander <sup>1</sup>	Hispanic/ Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/ Not Reported	
<b>Number of participants</b>	487	4084	7312	14167	133328	1669	761	
<b>Mean follow-up (months)</b>	154.5	174.9	166.5	169.3	204.8	208.2	142.1	
<b>Overall cancer</b>	81 (1.29%)	607 (1.02%)	945 (0.93%)	2299 (1.15%)	31521 (1.39%)	309 (1.07%)	136 (1.51%)	
<b>Primary cancer</b>								
Breast cancer	26 (0.41%)	276 (0.46%)	390 (0.38%)	927 (0.46%)	12125 (0.53%)	121 (0.42%)	43 (0.48%)	
Invasive breast cancer	23 (0.37%)	224 (0.38%)	318 (0.31%)	746 (0.37%)	10197 (0.45%)	106 (0.37%)	36 (0.40%)	
In situ breast cancer	4 (0.06%)	56 (0.09%)	79 (0.08%)	205 (0.10%)	2128 (0.09%)	17 (0.06%)	8 (0.09%)	
Ovarian cancer	5 (0.08%)	16 (0.03%)	40 (0.04%)	76 (0.04%)	1184 (0.05%)	10 (0.03%)	10 (0.11%)	
Endometrial cancer <sup>2</sup>	3 (0.09%)	26 (0.07%)	44 (0.08%)	90 (0.10%)	1708 (0.12%)	11 (0.08%)	4 (0.08%)	
Colorectal cancer	9 (0.14%)	57 (0.10%)	104 (0.10%)	299 (0.15%)	2987 (0.13%)	32 (0.11%)	13 (0.14%)	
<b>Other cancer</b>								
Accessory sinus	0 (0.00%)	0 (0.00%)	0 (0.00%)	1 (<0.01%)	15 (<0.01%)	0 (0.00%)	0 (0.00%)	
Adrenal gland	0 (0.00%)	0 (0.00%)	1 (<0.01%)	2 (<0.01%)	14 (<0.01%)	0 (0.00%)	0 (0.00%)	
Anus	0 (0.00%)	2 (<0.01%)	6 (0.01%)	10 (0.01%)	119 (0.01%)	0 (0.00%)	0 (0.00%)	
Appendix	0 (0.00%)	0 (0.00%)	3 (<0.01%)	4 (<0.01%)	41 (<0.01%)	0 (0.00%)	1 (0.01%)	
Base of Tongue	0 (0.00%)	0 (0.00%)	2 (<0.01%)	0 (0.00%)	32 (<0.01%)	0 (0.00%)	1 (0.01%)	
Biliary tract, parts of (other/unspecified)	1 (0.02%)	2 (<0.01%)	14 (0.01%)	14 (0.01%)	174 (0.01%)	2 (0.01%)	1 (0.01%)	
Bladder	1 (0.02%)	11 (0.02%)	18 (0.02%)	63 (0.03%)	1004 (0.04%)	12 (0.04%)	1 (0.01%)	
Bones/joints/articular cartilage (limbs)	1 (0.02%)	1 (<0.01%)	0 (0.00%)	0 (0.00%)	12 (<0.01%)	0 (0.00%)	0 (0.00%)	
Bones/joints/articular cartilage (other)	0 (0.00%)	0 (0.00%)	1 (<0.01%)	1 (<0.01%)	26 (<0.01%)	1 (<0.01%)	1 (0.01%)	
Brain	1 (0.02%)	5 (0.01%)	7 (0.01%)	14 (0.01%)	367 (0.02%)	0 (0.00%)	1 (0.01%)	
Cervix	0 (0.00%)	2 (<0.01%)	6 (0.01%)	20 (0.01%)	105 (<0.01%)	1 (<0.01%)	0 (0.00%)	
Central Nervous System (excludes brain)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	5 (<0.01%)	0 (0.00%)	0 (0.00%)	
Connective/subcutaneous/soft tissues	0 (0.00%)	4 (0.01%)	5 (<0.01%)	9 (<0.01%)	186 (0.01%)	3 (0.01%)	1 (0.01%)	
Endocrine glands, related structures	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	5 (<0.01%)	0 (0.00%)	0 (0.00%)	
Esophagus	1 (0.02%)	1 (<0.01%)	3 (<0.01%)	9 (<0.01%)	176 (0.01%)	3 (0.01%)	1 (0.01%)	
Eye and adnexa	0 (0.00%)	0 (0.00%)	4 (<0.01%)	0 (0.00%)	77 (<0.01%)	2 (0.01%)	0 (0.00%)	
Floor of mouth	0 (0.00%)	1 (<0.01%)	1 (<0.01%)	2 (<0.01%)	13 (<0.01%)	0 (0.00%)	1 (0.01%)	
Gallbladder	0 (0.00%)	1 (<0.01%)	8 (0.01%)	11 (0.01%)	129 (0.01%)	1 (<0.01%)	0 (0.00%)	

<sup>1</sup> Native Hawaiian/Other Pacific Islander CT and OS participants (n=119) are combined with Asian CT and OS participants for reporting purposes due to small numbers.

<sup>2</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial and uterine cancer.

**Table 3.9 (continued)**  
**Verified Primary and Other Cancers (Annualized Percentages) by Race/Ethnicity: CT and OS Participants**

Data as of: March 6, 2021; Events through March 6, 2021

	Race/Ethnicity						
	American Indian/Alaska Native	Asian or Native Hawaiian/Other Pacific Islander <sup>1</sup>	Hispanic /Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/ Not Reported
<b>Number of participants</b>	487	4084	7312	14167	133328	1669	761
<b>Mean follow-up (months)</b>	154.5	174.9	166.5	169.3	204.8	208.2	142.1
Genital organs	1 (0.02%)	6 (0.01%)	16 (0.02%)	17 (0.01%)	363 (0.02%)	3 (0.01%)	1 (0.01%)
Gum	0 (0.00%)	1 (<0.01%)	2 (<0.01%)	2 (<0.01%)	45 (<0.01%)	0 (0.00%)	0 (0.00%)
Heart	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	40 (<0.01%)	0 (0.00%)	0 (0.00%)
Kidney	7 (0.11%)	14 (0.02%)	23 (0.02%)	60 (0.03%)	678 (0.03%)	8 (0.03%)	4 (0.04%)
Larynx	0 (0.00%)	0 (0.00%)	0 (0.00%)	6 (<0.01%)	49 (<0.01%)	0 (0.00%)	0 (0.00%)
Leukemia	2 (0.03%)	16 (0.03%)	25 (0.02%)	62 (0.03%)	1095 (0.05%)	13 (0.04%)	6 (0.07%)
Liver	3 (0.05%)	15 (0.03%)	21 (0.02%)	29 (0.01%)	285 (0.01%)	3 (0.01%)	3 (0.03%)
Lung	12 (0.19%)	62 (0.10%)	85 (0.08%)	297 (0.15%)	3897 (0.17%)	36 (0.12%)	21 (0.23%)
Lymph nodes	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	3 (<0.01%)	0 (0.00%)	0 (0.00%)
Lymphoma, Hodgkins	0 (0.00%)	1 (<0.01%)	8 (0.01%)	4 (<0.01%)	67 (<0.01%)	1 (<0.01%)	1 (0.01%)
Lymphoma, non-Hodgkins	1 (0.02%)	38 (0.06%)	64 (0.06%)	71 (0.04%)	1750 (0.08%)	7 (0.02%)	8 (0.09%)
Melanoma of the skin	2 (0.03%)	7 (0.01%)	23 (0.02%)	9 (<0.01%)	2682 (0.12%)	18 (0.06%)	4 (0.04%)
Meninges	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	8 (<0.01%)	0 (0.00%)	0 (0.00%)
Multiple myeloma	2 (0.03%)	3 (0.01%)	26 (0.03%)	83 (0.04%)	555 (0.02%)	8 (0.03%)	3 (0.03%)
Mycosis fungoides	0 (0.00%)	0 (0.00%)	0 (0.00%)	4 (<0.01%)	25 (<0.01%)	0 (0.00%)	0 (0.00%)
Nasal cavity mid ear	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	21 (<0.01%)	0 (0.00%)	0 (0.00%)
Oral (mouth)	0 (0.00%)	0 (0.00%)	2 (<0.01%)	3 (<0.01%)	40 (<0.01%)	0 (0.00%)	0 (0.00%)
Other digestive cancer	0 (0.00%)	0 (0.00%)	1 (<0.01%)	4 (<0.01%)	58 (<0.01%)	0 (0.00%)	1 (0.01%)
Other lip	0 (0.00%)	0 (0.00%)	0 (0.00%)	1 (<0.01%)	15 (<0.01%)	0 (0.00%)	0 (0.00%)
Palate	0 (0.00%)	1 (<0.01%)	0 (0.00%)	0 (0.00%)	33 (<0.01%)	0 (0.00%)	0 (0.00%)
Pancreas	1 (0.02%)	39 (0.07%)	36 (0.04%)	116 (0.06%)	1166 (0.05%)	16 (0.06%)	6 (0.07%)
Parotid gland (Stensen's duct)	0 (0.00%)	2 (<0.01%)	1 (<0.01%)	8 (<0.01%)	56 (<0.01%)	0 (0.00%)	0 (0.00%)
Peripheral nerves and autonomic nervous system	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	2 (<0.01%)	0 (0.00%)	0 (0.00%)
Peritoneum	1 (0.02%)	2 (<0.01%)	8 (0.01%)	14 (0.01%)	205 (0.01%)	2 (0.01%)	1 (0.01%)

<sup>1</sup> Native Hawaiian/Other Pacific Islander CT and OS participants (n=119) are combined with Asian CT and OS participants for reporting purposes due to small numbers.

**Table 3.9 (continued)**  
**Verified Primary and Other Cancers (Annualized Percentages) by Race/Ethnicity: CT and OS Participants**

Data as of: March 6, 2021; Events through March 6, 2021

	Race/Ethnicity						
	American Indian/ Alaska Native	Asian or Native Hawaiian/ Other Pacific Islander <sup>1</sup>	Hispanic/ Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/Not Reported
<b>Number of participants</b>	487	4084	7312	14167	133328	1669	761
<b>Mean follow-up (months)</b>	154.5	174.9	166.5	169.3	204.8	208.2	142.1
Pharynx	0 (0.00%)	0 (0.00%)	0 (0.00%)	3 (<0.01%)	28 (<0.01%)	0 (0.00%)	0 (0.00%)
Pyriform sinus	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	2 (<0.01%)	0 (0.00%)	0 (0.00%)
Renal Pelvis	0 (0.00%)	2 (<0.01%)	2 (<0.01%)	10 (0.01%)	121 (0.01%)	1 (<0.01%)	1 (0.01%)
Respiratory system, intrathoracic, other	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	3 (<0.01%)	0 (0.00%)	0 (0.00%)
Salivary glands, major (other/unspecified)	0 (0.00%)	0 (0.00%)	0 (0.00%)	0 (0.00%)	19 (<0.01%)	0 (0.00%)	0 (0.00%)
Small intestine	0 (0.00%)	3 (0.01%)	4 (<0.01%)	13 (0.01%)	149 (0.01%)	2 (0.01%)	0 (0.00%)
Stomach	0 (0.00%)	15 (0.03%)	11 (0.01%)	47 (0.02%)	250 (0.01%)	7 (0.02%)	2 (0.02%)
Thymus	0 (0.00%)	1 (<0.01%)	0 (0.00%)	0 (0.00%)	12 (<0.01%)	1 (<0.01%)	0 (0.00%)
Thyroid	0 (0.00%)	8 (0.01%)	14 (0.01%)	37 (0.02%)	457 (0.02%)	3 (0.01%)	0 (0.00%)
Tongue, part of (other/unspecified)	0 (0.00%)	2 (<0.01%)	0 (0.00%)	2 (<0.01%)	85 (<0.01%)	2 (0.01%)	1 (0.01%)
Tonsil	0 (0.00%)	0 (0.00%)	0 (0.00%)	1 (<0.01%)	21 (<0.01%)	1 (<0.01%)	0 (0.00%)
Trachea	0 (0.00%)	0 (0.00%)	0 (0.00%)	1 (<0.01%)	0 (0.00%)	0 (0.00%)	0 (0.00%)
Ureter	1 (0.02%)	3 (0.01%)	2 (<0.01%)	1 (<0.01%)	81 (<0.01%)	2 (0.01%)	0 (0.00%)
Urinary organs (other/unspecified)	1 (0.02%)	2 (<0.01%)	2 (<0.01%)	4 (<0.01%)	30 (<0.01%)	1 (<0.01%)	0 (0.00%)
Uterus, not otherwise specified <sup>2</sup>	1 (0.03%)	4 (0.01%)	5 (0.01%)	16 (0.02%)	117 (0.01%)	1 (0.01%)	0 (0.00%)
Other/unknown site of cancer	3 (0.05%)	11 (0.02%)	15 (0.01%)	39 (0.02%)	509 (0.02%)	2 (0.01%)	5 (0.06%)
Other/unknown cancers reported on death form	5 (0.08%)	8 (0.01%)	13 (0.01%)	39 (0.02%)	434 (0.02%)	2 (0.01%)	4 (0.04%)

<sup>1</sup> Native Hawaiian/Other Pacific Islander CT and OS participants (n=119) are combined with Asian CT and OS participants for reporting purposes due to small numbers.

<sup>2</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial and uterine cancer.



**Table 4.1**  
**Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Age at Enrollment for**  
**MRC Super Cohort Participants<sup>1</sup> Who Did Not Report a Prevalent Condition at Baseline**

Data as of: March 6, 2021; Events through March 6, 2021

Outcome	Total	Age at Enrollment			
		50-54	55-59	60-69	70-79
<b>Number of participants</b>	44174	6788	9352	19418	8616
<b>Mean follow-up (months)</b>	184.4	198.6	199.2	185.5	154.6
Angina (hospitalized) <sup>2</sup>	3563 (0.55%)	448 (0.41%)	675 (0.45%)	1720 (0.61%)	720 (0.71%)
Diabetes (treated)	8161 (1.28%)	1447 (1.35%)	1869 (1.28%)	3691 (1.31%)	1154 (1.11%)
Hysterectomy	1921 (0.49%)	309 (0.51%)	482 (0.52%)	862 (0.50%)	268 (0.43%)
Osteoarthritis <sup>3</sup>	14000 (3.29%)	2445 (2.90%)	3284 (3.07%)	6097 (3.42%)	2174 (3.85%)
Intestinal polyps	10813 (1.71%)	1820 (1.68%)	2577 (1.75%)	4888 (1.76%)	1528 (1.56%)
Lupus <sup>3</sup>	811 (0.12%)	132 (0.12%)	181 (0.12%)	370 (0.13%)	128 (0.12%)
Hypertension treated w/pills	16655 (3.62%)	2750 (3.18%)	3744 (3.35%)	7267 (3.73%)	2894 (4.32%)
COPD <sup>4</sup>	2778 (0.81%)	402 (0.68%)	661 (0.84%)	1372 (0.92%)	343 (0.65%)
Macular degeneration <sup>5</sup>	5340 (1.08%)	485 (0.57%)	956 (0.83%)	2681 (1.23%)	1218 (1.60%)
Dementia <sup>5</sup>	4811 (0.97%)	284 (0.33%)	615 (0.53%)	2459 (1.13%)	1453 (1.91%)
Parkinson's disease <sup>5</sup>	643 (0.13%)	68 (0.08%)	133 (0.12%)	331 (0.15%)	111 (0.15%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>2</sup> During WHI Extension Study 2005-2010, the outcome was angina with hospitalization for a heart condition that may or may not have been related to the angina.

<sup>3</sup> This outcome has not been self-reported on all versions of Form 33 during WHI follow-up. The annualized percentages are corrected for the different amounts of follow-up.

<sup>4</sup> Data only collected during the WHI Extension Study 2010-2025.

<sup>5</sup> Data only collected during the WHI Extension Studies 2005-2025.

**Table 4.2**  
**Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Race/Ethnicity for**  
**MRC Super Cohort Participants<sup>1</sup> Who Did Not Report a Prevalent Condition at Baseline**

Data as of: March 6, 2021; Events through March 6, 2021

Outcomes	Race/Ethnicity						
	American Indian/ Alaska Native	Asian or Native Hawaiian/ Other Pacific Islander <sup>2</sup>	Hispanic/ Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/Not Reported
<b>Number of participants</b>	108	526	6525	14025	22278	550	162
<b>Mean follow-up (months)</b>	166.6	178.0	160.1	167.6	201.9	205.3	162.6
Angina (hospitalized) <sup>3</sup>	12 (0.85%)	24 (0.33%)	372 (0.45%)	1033 (0.57%)	2049 (0.57%)	62 (0.71%)	11 (0.53%)
Diabetes (treated)	18 (1.48%)	100 (1.36%)	1184 (1.44%)	2857 (1.62%)	3847 (1.06%)	121 (1.42%)	34 (1.63%)
Hysterectomy	2 (0.26%)	13 (0.24%)	292 (0.60%)	434 (0.50%)	1160 (0.48%)	18 (0.41%)	2 (0.16%)
Osteoarthritis <sup>4</sup>	29 (3.53%)	178 (3.22%)	2118 (3.63%)	3972 (3.39%)	7459 (3.14%)	191 (3.58%)	53 (3.76%)
Intestinal polyps	26 (1.86%)	109 (1.54%)	1347 (1.64%)	3439 (1.90%)	5695 (1.63%)	164 (1.88%)	33 (1.58%)
Lupus <sup>4</sup>	1 (0.07%)	4 (0.05%)	132 (0.16%)	280 (0.15%)	378 (0.10%)	15 (0.16%)	1 (0.05%)
Hypertension treated w/pills	49 (5.00%)	196 (3.65%)	2407 (3.65%)	4231 (4.24%)	9486 (3.38%)	238 (3.87%)	48 (3.63%)
COPD <sup>5</sup>	6 (0.75%)	19 (0.45%)	264 (0.50%)	689 (0.63%)	1750 (1.02%)	44 (1.06%)	6 (0.47%)
Macular degeneration <sup>6</sup>	11 (0.89%)	42 (0.76%)	560 (0.77%)	932 (0.60%)	3705 (1.47%)	73 (1.20%)	17 (0.91%)
Dementia <sup>6</sup>	7 (0.57%)	46 (0.84%)	506 (0.69%)	1089 (0.70%)	3073 (1.22%)	76 (1.25%)	14 (0.75%)
Parkinson's disease <sup>6</sup>	2 (0.16%)	8 (0.15%)	73 (0.10%)	148 (0.10%)	401 (0.16%)	9 (0.15%)	2 (0.11%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

<sup>2</sup> Native Hawaiian/Other Pacific Islander MRC Super Cohort participants (n=40) are combined with Asian MRC Super Cohort participants for reporting purposes due to small numbers.

<sup>3</sup> During WHI Extension Study 2005-2010, the outcome was angina with hospitalization for a heart condition that may or may not have been related to the angina.

<sup>4</sup> This outcome has not been self-reported on all versions of Form 33 during WHI follow-up. The annualized percentages are corrected for the different amounts of follow-up.

<sup>5</sup> Data only collected during the WHI Extension Study 2010-2025.

<sup>6</sup> Data only collected during the WHI Extension Studies 2005-2025.

**Table 4.3**  
**Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Age at Enrollment for SRC Super Cohort Participants<sup>1</sup> Who Did Not Report a Prevalent Condition at Baseline**

Data as of: March 6, 2021; Events through March 6, 2021

Outcome	Total	Age at Enrollment			
		50-54	55-59	60-69	70-79
<b>Number of participants</b>	117634	14781	22638	53171	27044
<b>Mean follow-up (months)</b>	202.0	234.3	228.3	203.7	159.1
DVT	4528 (0.24%)	413 (0.15%)	775 (0.19%)	2239 (0.26%)	1101 (0.32%)
Pulmonary embolism <sup>2</sup>	2816 (0.14%)	278 (0.10%)	528 (0.12%)	1411 (0.16%)	599 (0.17%)
Angina (hospitalized) <sup>3</sup>	9370 (0.49%)	849 (0.30%)	1634 (0.39%)	4728 (0.55%)	2159 (0.65%)
Diabetes (treated)	17724 (0.92%)	2494 (0.88%)	3817 (0.90%)	8348 (0.95%)	3065 (0.88%)
Hysterectomy	7027 (0.59%)	1123 (0.63%)	1724 (0.63%)	3185 (0.60%)	995 (0.49%)
Osteoarthritis <sup>4</sup>	38711 (3.27%)	6049 (2.85%)	8838 (3.06%)	17315 (3.39%)	6509 (3.77%)
Intestinal polyps	30597 (1.69%)	4843 (1.75%)	7193 (1.77%)	13797 (1.69%)	4764 (1.53%)
Lupus <sup>4</sup>	1946 (0.10%)	252 (0.09%)	406 (0.10%)	900 (0.10%)	388 (0.11%)
Hypertension treated w/pills	46079 (3.12%)	5999 (2.44%)	9499 (2.74%)	21269 (3.26%)	9312 (3.99%)
COPD <sup>5</sup>	8082 (0.87%)	1006 (0.76%)	1755 (0.90%)	4217 (1.01%)	1104 (0.67%)
Macular degeneration <sup>6</sup>	18671 (1.32%)	1432 (0.70%)	2922 (0.97%)	9648 (1.51%)	4669 (1.87%)
Dementia <sup>6</sup>	13647 (0.97%)	604 (0.30%)	1576 (0.52%)	7176 (1.12%)	4291 (1.72%)
Parkinson's disease <sup>6</sup>	2367 (0.17%)	183 (0.09%)	437 (0.14%)	1315 (0.21%)	432 (0.17%)

<sup>1</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaskan Native, Asian/Pacific Islander, and Unknown Race/Ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study.

<sup>2</sup> During the main WHI Study and the WHI Extension Study 2005-2010, pulmonary embolism includes only inpatient self-reports. During WHI Extension Study 2010-2025, pulmonary embolism includes both inpatient and outpatient self-reports.

<sup>3</sup> During WHI Extension Study 2005-2010, the outcome was angina with hospitalization for a heart condition that may or may not have been related to the angina.

<sup>4</sup> These outcomes have not been self-reported on all versions of Form 33 during WHI follow-up. The annualized percentages are corrected for the different amounts of follow-up.

<sup>5</sup> Data only collected during the WHI Extension Study 2010-2025.

<sup>6</sup> Data only collected during the WHI Extension Studies 2005-2025.

**Table 4.4**  
**Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Race/Ethnicity for SRC Super Cohort Participants<sup>1</sup> Who Did Not Report a Prevalent Condition at Baseline**

Data as of: March 6, 2021; Events through March 6, 2021

Outcomes	Race/Ethnicity						
	American Indian/Alaska Native	Asian or Native Hawaiian/Other Pacific Islander <sup>2</sup>	Hispanic/Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/Not Reported
<b>Number of participants</b>	379	3558	787	142	111050	1119	599
<b>Mean follow-up (months)</b>	149.6	172.2	206.1	185.8	203.4	207.1	134.5
DVT	5 (0.11%)	38 (0.08%)	30 (0.23%)	10 (0.49%)	4382 (0.24%)	51 (0.28%)	12 (0.19%)
Pulmonary embolism <sup>3</sup>	7 (0.15%)	18 (0.04%)	9 (0.07%)	4 (0.19%)	2749 (0.15%)	20 (0.11%)	9 (0.14%)
Angina (hospitalized) <sup>4</sup>	16 (0.37%)	140 (0.28%)	68 (0.52%)	13 (0.66%)	8981 (0.50%)	129 (0.71%)	23 (0.36%)
Diabetes (treated)	65 (1.58%)	566 (1.16%)	151 (1.16%)	37 (1.79%)	16607 (0.90%)	214 (1.17%)	84 (1.32%)
Hysterectomy	12 (0.50%)	122 (0.37%)	42 (0.49%)	4 (0.38%)	6772 (0.60%)	53 (0.52%)	22 (0.54%)
Osteoarthritis <sup>5</sup>	97 (3.62%)	1168 (3.17%)	296 (3.66%)	44 (3.45%)	36577 (3.27%)	393 (3.36%)	136 (3.25%)
Intestinal polyps	70 (1.60%)	756 (1.64%)	224 (1.83%)	45 (2.23%)	29082 (1.69%)	299 (1.71%)	121 (1.95%)
Lupus <sup>5</sup>	10 (0.22%)	39 (0.08%)	13 (0.10%)	2 (0.09%)	1840 (0.10%)	31 (0.17%)	11 (0.17%)
Hypertension treated w/pills	119 (3.81%)	1178 (3.25%)	340 (3.32%)	55 (4.61%)	43764 (3.10%)	450 (3.33%)	173 (3.67%)
COPD <sup>6</sup>	17 (0.59%)	105 (0.35%)	59 (0.93%)	9 (0.81%)	7784 (0.89%)	96 (1.09%)	12 (0.26%)
Macular degeneration <sup>7</sup>	27 (0.62%)	266 (0.62%)	129 (1.36%)	7 (0.43%)	18032 (1.35%)	169 (1.27%)	41 (0.63%)
Dementia <sup>7</sup>	26 (0.59%)	241 (0.56%)	105 (1.11%)	13 (0.80%)	13072 (0.98%)	153 (1.15%)	37 (0.57%)
Parkinson's disease <sup>7</sup>	2 (0.05%)	43 (0.10%)	18 (0.19%)	0 (0.00%)	2268 (0.17%)	30 (0.23%)	6 (0.09%)

<sup>1</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaskan Native, Asian/Pacific Islander, and Unknown Race/Ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

<sup>2</sup> Native Hawaiian/Other Pacific Islander SRC Super Cohort participants (n=79) are combined with Asian SRC Super Cohort participants for reporting purposes due to small numbers.

<sup>3</sup> During the main WHI Study and the WHI Extension Study 2005-2010, pulmonary embolism includes only inpatient self-reports. During WHI Extension Study 2010-2025, pulmonary embolism includes both inpatient and outpatient self-reports.

<sup>4</sup> During WHI Extension Study 2005-2010, the outcome was angina with hospitalization for a heart condition that may or may not have been related to the angina.

<sup>5</sup> These outcomes have not been self-reported on all versions of Form 33 during WHI follow-up. The annualized percentages are corrected for the different amounts of follow-up.

<sup>6</sup> Data only collected during the WHI Extension Study 2010-2025.

<sup>7</sup> Data only collected during the WHI Extension Studies 2005-2025.

**Table 4.5**  
**Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Age at Enrollment for**  
**CT Participants Who Did Not Report a Prevalent Condition at Baseline**

Data as of: March 6, 2021; Events through March 6, 2021

Outcome	Total	Age at Enrollment			
		50-54	55-59	60-69	70-79
<b>Number randomized</b>	68132	9188	14661	31389	12894
<b>Mean follow-up (months)</b>	206.1	229.3	225.1	206.5	167.3
<b>Hospitalizations</b>					
Ever	51949 (4.44%)	5881 (3.35%)	10329 (3.76%)	24902 (4.61%)	10837 (6.03%)
Two or more	39854 (3.41%)	4060 (2.31%)	7572 (2.75%)	19563 (3.62%)	8659 (4.82%)
<b>Other</b>					
DVT	3052 (0.27%)	267 (0.16%)	590 (0.22%)	1508 (0.29%)	687 (0.40%)
Pulmonary embolism <sup>1</sup>	1827 (0.16%)	181 (0.10%)	359 (0.13%)	933 (0.17%)	354 (0.20%)
Angina (hospitalized) <sup>2</sup>	6066 (0.54%)	625 (0.36%)	1143 (0.43%)	3085 (0.60%)	1213 (0.73%)
Diabetes (treated)	12404 (1.10%)	1915 (1.12%)	2866 (1.08%)	5849 (1.13%)	1774 (1.03%)
Gallbladder disease <sup>3,4</sup>	5248 (1.15%)	746 (1.07%)	1195 (1.15%)	2463 (1.21%)	844 (1.05%)
Hysterectomy	3800 (0.55%)	589 (0.58%)	986 (0.57%)	1751 (0.56%)	474 (0.47%)
Glaucoma <sup>4</sup>	7565 (1.78%)	744 (1.19%)	1457 (1.53%)	3662 (1.92%)	1702 (2.24%)
Osteoporosis <sup>4</sup>	14697 (3.53%)	1451 (2.32%)	2635 (2.80%)	7142 (3.83%)	3469 (4.72%)
Osteoarthritis <sup>5</sup>	23995 (3.27%)	3895 (2.91%)	5881 (3.07%)	10825 (3.40%)	3394 (3.76%)
Rheumatoid arthritis <sup>4</sup>	4010 (0.76%)	538 (0.70%)	866 (0.74%)	1822 (0.77%)	784 (0.84%)
Intestinal polyps	18612 (1.71%)	2959 (1.74%)	4619 (1.77%)	8606 (1.73%)	2428 (1.53%)
Lupus <sup>5</sup>	1165 (0.10%)	158 (0.09%)	277 (0.10%)	549 (0.10%)	181 (0.10%)
Kidney stones <sup>4,5</sup>	1877 (0.50%)	241 (0.46%)	379 (0.47%)	898 (0.53%)	359 (0.51%)
Cataracts <sup>4,5</sup>	21571 (6.44%)	1468 (2.79%)	3731 (4.62%)	11650 (7.63%)	4722 (9.66%)
Hypertension treated w/pills	27951 (3.31%)	3950 (2.75%)	6380 (3.01%)	12985 (3.46%)	4636 (4.11%)
COPD <sup>6</sup>	4970 (0.92%)	624 (0.77%)	1158 (0.92%)	2609 (1.06%)	579 (0.72%)
Macular degeneration <sup>7</sup>	10525 (1.32%)	822 (0.68%)	1846 (0.98%)	5570 (1.52%)	2287 (1.97%)
Dementia <sup>7</sup>	8256 (1.04%)	416 (0.35%)	1046 (0.56%)	4414 (1.21%)	2380 (2.05%)
Parkinson's disease <sup>7</sup>	1249 (0.16%)	106 (0.09%)	274 (0.15%)	681 (0.19%)	188 (0.16%)

<sup>1</sup> During the main WHI Study and the WHI Extension Study 2005-2010, pulmonary embolism includes only inpatient self-reports. During WHI Extension Study 2010-2025, pulmonary embolism includes both inpatient and outpatient self-reports.

<sup>2</sup> During WHI Extension Study 2005-2010, the outcome was angina with hospitalization for a heart condition that may or may not have been related to the angina.

<sup>3</sup> "Gallbladder disease" includes self-reports of both hospitalized and non-hospitalized events.

<sup>4</sup> Data not collected for the WHI Extension Studies 2005-2025.

<sup>5</sup> These outcomes have not been self-reported on all versions of Form 33 during WHI follow-up. The annualized percentages are corrected for the different amounts of follow-up.

<sup>6</sup> Data only collected during the WHI Extension Study 2010-2025.

<sup>7</sup> Data only collected during the WHI Extension Studies 2005-2025.

**Table 4.6**  
**Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Race/Ethnicity for**  
**CT Participants Who Did Not Report a Prevalent Condition at Baseline**

Data as of: March 6, 2021; Events through March 6, 2021

Outcomes	Race/Ethnicity						
	American Indian/ Alaska Native	Asian or Native Hawaiian/ Other Pacific Islander <sup>1</sup>	Hispanic/ Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/Not Reported
<b>Number randomized</b>	180	1465	3231	6748	55407	821	280
<b>Mean follow-up (months)</b>	166.2	196.7	179.2	185.9	210.7	216.4	156.7
<b>Hospitalizations</b>							
Ever	124 (4.97%)	879 (3.66%)	1945 (4.03%)	4737 (4.53%)	43432 (4.47%)	641 (4.33%)	191 (5.22%)
Two or more	99 (3.97%)	544 (2.27%)	1291 (2.67%)	3403 (3.26%)	33875 (3.48%)	507 (3.42%)	135 (3.69%)
<b>Other</b>							
DVT	7 (0.30%)	17 (0.07%)	83 (0.18%)	310 (0.30%)	2572 (0.27%)	47 (0.33%)	16 (0.45%)
Pulmonary embolism <sup>2</sup>	6 (0.25%)	6 (0.03%)	35 (0.07%)	173 (0.17%)	1577 (0.16%)	23 (0.16%)	7 (0.19%)
Angina (hospitalized) <sup>3</sup>	12 (0.50%)	61 (0.26%)	211 (0.45%)	588 (0.60%)	5061 (0.54%)	119 (0.87%)	14 (0.41%)
Diabetes (treated)	31 (1.41%)	305 (1.34%)	682 (1.50%)	1571 (1.67%)	9583 (1.01%)	183 (1.33%)	49 (1.38%)
Gallbladder disease <sup>4,5</sup>	16 (1.48%)	85 (0.82%)	270 (1.41%)	404 (0.85%)	4388 (1.18%)	73 (1.35%)	12 (0.71%)
Hysterectomy	4 (0.35%)	52 (0.33%)	159 (0.58%)	255 (0.56%)	3283 (0.56%)	38 (0.52%)	9 (0.41%)
Glaucoma <sup>5</sup>	20 (1.86%)	148 (1.69%)	381 (1.92%)	964 (2.37%)	5923 (1.70%)	101 (1.96%)	28 (1.78%)
Osteoporosis <sup>5</sup>	34 (3.18%)	374 (4.32%)	727 (3.78%)	879 (2.08%)	12468 (3.68%)	168 (3.38%)	47 (3.07%)
Osteoarthritis <sup>6</sup>	63 (4.05%)	536 (3.07%)	1173 (3.57%)	2105 (3.30%)	19722 (3.25%)	311 (3.50%)	85 (3.57%)
Rheumatoid arthritis <sup>5</sup>	16 (1.31%)	74 (0.68%)	384 (1.63%)	656 (1.33%)	2791 (0.65%)	63 (1.00%)	26 (1.39%)
Intestinal polyps	43 (1.85%)	367 (1.67%)	752 (1.64%)	1876 (1.93%)	15257 (1.69%)	259 (1.87%)	58 (1.70%)
Lupus <sup>6</sup>	4 (0.17%)	18 (0.08%)	64 (0.14%)	138 (0.14%)	915 (0.10%)	24 (0.17%)	2 (0.06%)
Kidney stones <sup>5,6</sup>	9 (0.99%)	43 (0.55%)	106 (0.61%)	179 (0.48%)	1499 (0.49%)	32 (0.71%)	9 (0.65%)
Cataracts <sup>5,6</sup>	60 (7.03%)	407 (5.84%)	945 (5.68%)	1923 (5.74%)	17860 (6.58%)	300 (7.18%)	76 (6.11%)
Hypertension treated w/pills	70 (4.26%)	552 (3.33%)	1312 (3.65%)	2219 (4.14%)	23350 (3.23%)	363 (3.57%)	85 (3.50%)
COPD <sup>7</sup>	10 (0.72%)	56 (0.46%)	159 (0.60%)	384 (0.72%)	4266 (0.97%)	83 (1.29%)	12 (0.53%)
Macular degeneration <sup>8</sup>	20 (0.96%)	132 (0.77%)	308 (0.87%)	512 (0.69%)	9407 (1.44%)	122 (1.27%)	24 (0.77%)
Dementia <sup>8</sup>	17 (0.82%)	122 (0.71%)	299 (0.85%)	625 (0.85%)	7042 (1.08%)	122 (1.27%)	29 (0.93%)
Parkinson's disease <sup>8</sup>	2 (0.10%)	23 (0.13%)	43 (0.12%)	70 (0.10%)	1089 (0.17%)	18 (0.19%)	4 (0.13%)

<sup>1</sup> Native Hawaiian/Other Pacific Islander CT participants (n=66) are combined with Asian CT participants for reporting purposes due to small numbers.

<sup>2</sup> During the main WHI Study and the WHI Extension Study 2005-2010, pulmonary embolism includes only inpatient self-reports. During WHI Extension Study 2010-2025, pulmonary embolism includes both inpatient and outpatient self-reports.

<sup>3</sup> During WHI Extension Study 2005-2010, the outcome was angina with hospitalization for a heart condition that may or may not have been related to the angina.

<sup>4</sup> "Gallbladder disease" includes self-reports of both hospitalized and non-hospitalized events.

<sup>5</sup> Data not collected for the WHI Extension Studies 2005-2025.

<sup>6</sup> These outcomes have not been self-reported on all versions of Form 33 during WHI follow-up. The annualized percentages are corrected for the different amounts of follow-up.

<sup>7</sup> Data only collected during the WHI Extension Study 2010-2025.

<sup>8</sup> Data only collected during the WHI Extension Studies 2005-2025.

**Table 4.7**  
**Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Age at Enrollment for OS Participants Who Did Not Report a Prevalent Condition at Baseline**

Data as of: March 6, 2021; Events through March 6, 2021

Outcome	Total	Age at Enrollment			
		50-54	55-59	60-69	70-79
<b>Number enrolled</b>	93676	12381	17329	41200	22766
<b>Mean follow-up (months)</b>	190.7	218.5	215.3	193.0	152.7
<b>Hospitalizations</b>					
Ever	67149 (4.51%)	7325 (3.25%)	11492 (3.70%)	30631 (4.62%)	17701 (6.11%)
Two or more	49647 (3.34%)	4954 (2.20%)	8155 (2.62%)	23213 (3.50%)	13325 (4.60%)
<b>Other</b>					
DVT	3270 (0.23%)	323 (0.15%)	538 (0.18%)	1569 (0.25%)	840 (0.30%)
Pulmonary embolism <sup>1</sup>	2031 (0.14%)	225 (0.10%)	381 (0.12%)	971 (0.15%)	454 (0.16%)
Angina (hospitalized) <sup>2</sup>	6867 (0.48%)	672 (0.30%)	1166 (0.39%)	3363 (0.54%)	1666 (0.63%)
Diabetes (treated)	13481 (0.93%)	2026 (0.92%)	2820 (0.93%)	6190 (0.97%)	2445 (0.88%)
Gallbladder disease <sup>3,4</sup>	5673 (0.95%)	834 (0.96%)	1148 (0.98%)	2543 (0.99%)	1148 (0.85%)
Hysterectomy	5148 (0.35%)	843 (0.37%)	1220 (0.39%)	2296 (0.35%)	789 (0.27%)
Glaucoma <sup>4</sup>	8483 (1.87%)	845 (1.33%)	1372 (1.59%)	3899 (1.99%)	2367 (2.19%)
Osteoporosis <sup>4</sup>	20720 (4.75%)	2100 (3.35%)	3378 (4.00%)	9524 (5.07%)	5718 (5.63%)
Osteoarthritis <sup>5</sup>	28716 (3.26%)	4599 (2.81%)	6241 (3.05%)	12587 (3.38%)	5289 (3.79%)
Rheumatoid arthritis <sup>4</sup>	4588 (0.68%)	636 (0.67%)	883 (0.68%)	1888 (0.65%)	1181 (0.76%)
Intestinal polyps	22798 (1.69%)	3704 (1.72%)	5151 (1.77%)	10079 (1.69%)	3864 (1.54%)
Lupus <sup>5</sup>	1592 (0.11%)	226 (0.10%)	310 (0.10%)	721 (0.11%)	335 (0.12%)
Kidney stones <sup>4,5</sup>	2317 (0.57%)	292 (0.55%)	433 (0.59%)	994 (0.57%)	598 (0.60%)
Cataracts <sup>4,5</sup>	27103 (7.93%)	1726 (3.21%)	4088 (5.63%)	14045 (9.25%)	7244 (11.34%)
Hypertension treated w/pills	34783 (3.17%)	4799 (2.54%)	6863 (2.78%)	15551 (3.29%)	7570 (4.04%)
COPD <sup>6</sup>	5890 (0.80%)	784 (0.71%)	1258 (0.84%)	2980 (0.93%)	868 (0.62%)
Macular degeneration <sup>7</sup>	13486 (1.21%)	1095 (0.65%)	2032 (0.88%)	6759 (1.37%)	3600 (1.72%)
Dementia <sup>7</sup>	10202 (0.92%)	472 (0.28%)	1145 (0.50%)	5221 (1.06%)	3364 (1.61%)
Parkinson's disease <sup>7</sup>	1761 (0.16%)	145 (0.09%)	296 (0.13%)	965 (0.20%)	355 (0.17%)

<sup>1</sup> During the main WHI Study and the WHI Extension Study 2005-2010, pulmonary embolism includes only inpatient self-reports. During WHI Extension Study 2010- 2025, pulmonary embolism includes both inpatient and outpatient self-reports.

<sup>2</sup> During WHI Extension Study 2005-2010, the outcome was angina with hospitalization for a heart condition that may or may not have been related to the angina.

<sup>3</sup> "Gallbladder disease" includes self-reports of both hospitalized and non-hospitalized events.

<sup>4</sup> Data not collected for the WHI Extension Studies 2005-2025.

<sup>5</sup> These outcomes have not been self-reported on all versions of Form 33. The annualized percentages are corrected for the different amounts of follow-up.

<sup>6</sup> Data only collected during the WHI Extension Study 2010-2025.

<sup>7</sup> Data only collected during the WHI Extension Studies 2005-2025.

**Table 4.8**  
**Counts (Annualized Percentages) of Participants with Self-Reported Outcomes by Race/Ethnicity for OS Participants Who Did Not Report a Prevalent Condition at Baseline**

Data as of: March 6, 2021; Events through March 6, 2021

Outcomes	Race/Ethnicity						
	American Indian/Alaska Native	Asian or Native Hawaiian/Other Pacific Islander <sup>1</sup>	Hispanic/Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race	Other/Not Reported
<b>Number enrolled</b>	307	2619	4081	7419	77921	848	481
<b>Mean follow-up (months)</b>	145.9	159.7	153.8	151.3	197.9	196.9	130.9
<b>Hospitalizations</b>							
Ever	202 (5.41%)	1224 (3.51%)	2143 (4.10%)	4538 (4.85%)	58168 (4.53%)	600 (4.31%)	274 (5.22%)
Two or more	152 (4.07%)	714 (2.05%)	1343 (2.57%)	2963 (3.17%)	43869 (3.41%)	429 (3.08%)	177 (3.37%)
<b>Other</b>							
DVT	7 (0.20%)	26 (0.08%)	76 (0.15%)	231 (0.26%)	2898 (0.23%)	26 (0.20%)	6 (0.12%)
Pulmonary embolism <sup>2</sup>	6 (0.16%)	14 (0.04%)	31 (0.06%)	137 (0.15%)	1827 (0.14%)	11 (0.08%)	5 (0.10%)
Angina (hospitalized) <sup>3</sup>	16 (0.48%)	103 (0.30%)	229 (0.46%)	458 (0.53%)	5969 (0.49%)	72 (0.55%)	20 (0.40%)
Diabetes (treated)	52 (1.66%)	361 (1.08%)	653 (1.32%)	1323 (1.57%)	10871 (0.87%)	152 (1.16%)	69 (1.41%)
Gallbladder disease <sup>4,5</sup>	21 (1.35%)	78 (0.45%)	258 (1.14%)	365 (0.78%)	4871 (0.98%)	47 (0.86%)	33 (1.26%)
Hysterectomy	10 (0.27%)	83 (0.24%)	175 (0.33%)	183 (0.20%)	4649 (0.36%)	33 (0.24%)	15 (0.29%)
Glaucoma <sup>5</sup>	31 (2.24%)	247 (1.84%)	359 (1.83%)	955 (2.71%)	6747 (1.78%)	94 (2.20%)	50 (2.23%)
Osteoporosis <sup>5</sup>	49 (3.48%)	623 (4.87%)	862 (4.53%)	1042 (2.84%)	17848 (4.95%)	189 (4.48%)	107 (5.13%)
Osteoarthritis <sup>6</sup>	63 (3.22%)	810 (3.25%)	1241 (3.68%)	1911 (3.47%)	24314 (3.23%)	273 (3.35%)	104 (3.23%)
Rheumatoid arthritis <sup>5</sup>	21 (1.11%)	94 (0.52%)	422 (1.59%)	643 (1.34%)	3306 (0.58%)	57 (0.92%)	45 (1.54%)
Intestinal polyps	53 (1.53%)	498 (1.60%)	819 (1.68%)	1608 (1.88%)	19520 (1.67%)	204 (1.64%)	96 (1.97%)
Lupus <sup>6</sup>	7 (0.20%)	25 (0.07%)	81 (0.16%)	144 (0.16%)	1303 (0.10%)	22 (0.16%)	10 (0.20%)
Kidney stones <sup>5,6</sup>	13 (1.01%)	39 (0.32%)	138 (0.78%)	254 (0.76%)	1835 (0.55%)	24 (0.62%)	14 (0.70%)
Cataracts <sup>5,6</sup>	67 (6.51%)	680 (6.87%)	1069 (6.57%)	1880 (6.61%)	23005 (8.16%)	281 (8.50%)	121 (7.42%)
Hypertension treated w/pills	98 (3.99%)	822 (3.28%)	1435 (3.57%)	2067 (4.37%)	29900 (3.09%)	325 (3.41%)	136 (3.76%)
COPD <sup>7</sup>	13 (0.57%)	68 (0.32%)	164 (0.49%)	314 (0.54%)	5268 (0.86%)	57 (0.87%)	6 (0.17%)
Macular degeneration <sup>8</sup>	18 (0.51%)	176 (0.56%)	381 (0.79%)	427 (0.51%)	12330 (1.32%)	120 (1.23%)	34 (0.64%)
Dementia <sup>8</sup>	16 (0.45%)	165 (0.53%)	312 (0.65%)	477 (0.57%)	9103 (0.98%)	107 (1.09%)	22 (0.42%)
Parkinson's disease <sup>8</sup>	2 (0.06%)	28 (0.09%)	48 (0.10%)	78 (0.09%)	1580 (0.17%)	21 (0.21%)	4 (0.08%)

<sup>1</sup> Native Hawaiian/Other Pacific Islander OS participants (n=53) are combined with Asian OS participants for reporting purposes due to small numbers.

<sup>2</sup> During the main WHI Study and the WHI Extension Study 2005-2010, pulmonary embolism includes only inpatient self-reports. During WHI Extension Study 2010-2025, pulmonary embolism includes both inpatient and outpatient self-reports.

<sup>3</sup> During WHI Extension Study 2005-2010, the outcome was angina with hospitalization for a heart condition that may or may not have been related to the angina.

<sup>4</sup> "Gallbladder disease" includes self-reports of both hospitalized and non-hospitalized events.

<sup>5</sup> Data not collected for the WHI Extension Studies 2005-2025.

<sup>6</sup> These outcomes have not been self-reported on all versions of Form 33. The annualized percentages are corrected for the different amounts of follow-up.

<sup>7</sup> Data only collected during the WHI Extension Study 2010-2025.

<sup>8</sup> Data only collected during the WHI Extension Studies 2005-2025.



**Table 4.9**  
**Self-Reported Fractures (Annualized Percentages): MRC and SRC Super Cohort Participants**

Data as of: March 6, 2021; Events through March 6, 2021

	<b>MRC Super Cohort<sup>1</sup></b>		<b>SRC Super Cohort<sup>2</sup></b>	
<b>Number of participants</b>	44174		117634	
<b>Mean follow-up (months)</b>	185.8		203.7	
Elbow	691	(0.10%)	2405	(0.12%)
Foot	2005	(0.29%)	7435	(0.37%)
Hand	650	(0.10%)	2085	(0.10%)
Hip	1908	(0.28%)	6983	(0.35%)
Knee	1113	(0.16%)	3365	(0.17%)
Lower arm	3299	(0.48%)	10826	(0.54%)
Lower leg	2459	(0.36%)	7850	(0.39%)
Pelvis	871	(0.13%)	3818	(0.19%)
Tailbone	315	(0.05%)	1261	(0.06%)
Upper arm	2044	(0.30%)	6613	(0.33%)
Upper leg	781	(0.11%)	3092	(0.15%)
Spine	2052	(0.30%)	8773	(0.44%)
Other	7106	(1.04%)	24934	(1.25%)
Any fracture	15656	(2.29%)	52525	(2.63%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>2</sup> The SRC Super Cohort includes all Non-Hispanic White, American Indian/Alaska Native, Asian/Pacific Islander, and Unknown Race/Ethnicity participants (identified from race/ethnicity collected on Form 2 at baseline) from the Dietary Modification Trial (not also in the Hormone Trial) and the Observational Study.

**Table 4.10**  
**Self-Reported Fractures (Annualized Percentages): CT and OS Participants**

Data as of: March 6, 2021; Events through March 6, 2021

	CT		OS		Total	
<b>Number of participants</b>	68132		93676		161808	
<b>Mean follow-up (months)</b>	207.7		192.3		198.8	
Elbow	1321	(0.11%)	1775	(0.12%)	3096	(0.12%)
Foot	4124	(0.35%)	5316	(0.35%)	9440	(0.35%)
Hand	1264	(0.11%)	1471	(0.10%)	2735	(0.10%)
Hip	3775	(0.32%)	5116	(0.34%)	8891	(0.33%)
Knee	1905	(0.16%)	2573	(0.17%)	4478	(0.17%)
Lower arm	6226	(0.53%)	7899	(0.53%)	14125	(0.53%)
Lower leg	4599	(0.39%)	5710	(0.38%)	10309	(0.38%)
Pelvis	1888	(0.16%)	2801	(0.19%)	4689	(0.17%)
Tailbone	646	(0.05%)	930	(0.06%)	1576	(0.06%)
Upper arm	3921	(0.33%)	4736	(0.32%)	8657	(0.32%)
Upper leg	1644	(0.14%)	2229	(0.15%)	3873	(0.14%)
Spine	4502	(0.38%)	6323	(0.42%)	10825	(0.40%)
Other	13552	(1.15%)	18488	(1.23%)	32040	(1.20%)
Any fracture	29280	(2.48%)	38901	(2.59%)	68181	(2.54%)

**Table 5.1**  
**Agreement of the Central Adjudications with Self-Reports for Outcomes Reported in Extension Study 2010-2025**

Data as of: March 6, 2021

	Participants with a self-report <sup>1</sup>	Closed		Confirmed		Denied – related outcome found <sup>2</sup>		Denied – unrelated outcome found <sup>3</sup>		Denied – no outcome found <sup>3</sup>	
		N	%	N	(%) <sup>3</sup>	N	(%) <sup>3</sup>	N	(%) <sup>3</sup>	N	(%) <sup>3</sup>
<b>Cardiovascular</b>											
Clinical MI	793	692	87%	444	(64%)	125	(18%)	3	(0%)	120	(17%)
CABG	257	228	89%	155	(68%)	43	(19%)	0	(0%)	30	(13%)
PTCA	799	727	91%	486	(67%)	104	(14%)	3	(0%)	134	(18%)
Carotid artery disease	223	201	90%	111	(55%)	53	(26%)	0	(0%)	37	(18%)
Stroke	1612	1386	86%	975	(70%)	152	(11%)	1	(0%)	258	(19%)
PAD	391	310	79%	135	(44%)	75	(24%)	2	(1%)	98	(32%)
DVT	852	708	83%	405	(57%)	123	(17%)	6	(1%)	174	(25%)
Pulmonary embolism	452	406	90%	345	(85%)	26	(6%)	3	(1%)	32	(8%)
Valvular heart disease	538	480	89%	340	(71%)	88	(18%)	0	(0%)	52	(11%)
<b>Cancers</b>											
Breast cancer	3700	3510	95%	3431	(98%)	7	(0%)	1	(0%)	71	(2%)
Ovarian cancer	447	403	90%	250	(62%)	103	(26%)	0	(0%)	50	(12%)
Endometrial cancer	582	548	94%	417	(76%)	102	(19%)	1	(0%)	28	(5%)
Cervical cancer	84	77	92%	18	(23%)	23	(30%)	1	(1%)	35	(45%)
Colorectal cancer	1078	987	92%	835	(85%)	74	(7%)	4	(0%)	74	(7%)
Bladder/urinary tract cancer	492	450	91%	387	(86%)	28	(6%)	0	(0%)	35	(8%)
Brain cancer	206	155	75%	59	(38%)	20	(13%)	2	(1%)	74	(48%)
Esophagus cancer	86	75	87%	46	(61%)	12	(16%)	1	(1%)	16	(21%)
Gallbladder/bile duct cancer	106	96	91%	37	(39%)	43	(45%)	0	(0%)	16	(17%)
Kidney cancer	393	353	90%	212	(60%)	76	(22%)	2	(1%)	63	(18%)
Leukemia	401	357	89%	269	(75%)	29	(8%)	2	(1%)	57	(16%)
Liver cancer	365	287	79%	64	(22%)	55	(19%)	7	(2%)	161	(56%)
Lung cancer	1578	1378	87%	1150	(83%)	66	(5%)	3	(0%)	159	(12%)
Hodgkin's lymphoma	69	57	83%	11	(19%)	33	(58%)	0	(0%)	13	(23%)
Non-Hodgkin's lymphoma	525	478	91%	411	(86%)	39	(8%)	0	(0%)	28	(6%)
Melanoma	1944	1482	76%	1144	(77%)	49	(3%)	0	(0%)	289	(20%)
Multiple myeloma	241	212	88%	182	(86%)	11	(5%)	3	(1%)	16	(8%)
Pancreas cancer	496	435	88%	362	(83%)	29	(7%)	3	(1%)	41	(9%)
Stomach cancer	181	158	87%	64	(41%)	44	(28%)	0	(0%)	50	(32%)

<sup>1</sup> Excludes duplicates and prior conditions.<sup>2</sup> All cardiovascular outcomes are considered related, all cancers are considered related and all fractures are considered related.<sup>3</sup> Percentages between parentheses are relative to "closed."

**Table 5.1 (continued)**  
**Agreement of the Central Adjudications with Self-Reports for Outcomes Reported in Extension Study 2010-2025**

Data as of: March 6, 2021

	Participants with a self-report <sup>1</sup>	Closed		Confirmed		Denied – related outcome found <sup>2</sup>		Denied – unrelated outcome found		Denied – no outcome found	
		N	%	N	(%) <sup>3</sup>	N	(%) <sup>3</sup>	N	(%) <sup>3</sup>	N	(%) <sup>3</sup>
Thyroid cancer	189	168	89%	133	(79%)	5	(3%)	0	(0%)	30	(18%)
Other genital organ cancer <sup>4</sup>	157	132	84%	14	(11%)	95	(72%)	0	(0%)	23	(17%)
Other cancer <sup>5</sup>	1225	922	75%	422	(46%)	207	(22%)	7	(1%)	286	(31%)
<b>Fractures</b>											
Hip fracture	912	769	84%	658	(86%)	0	(0%)	8	(1%)	103	(13%)
Upper leg fracture <sup>6</sup>	459	395	86%	0	(0%)	179	(45%)	19	(5%)	197	(50%)

<sup>1</sup> Excludes duplicates and prior conditions.

<sup>2</sup> All cardiovascular outcomes are considered related, all cancers are considered related and all fractures are considered related.

<sup>3</sup> Percentages between parentheses are relative to “closed.”

<sup>4</sup> Does not include cancer of the ovary, endometrium, or cervix.

<sup>5</sup> Any cancer other than those listed above, excluding non-melanoma skin cancer.

<sup>6</sup> Upper leg fractures are only investigated for possible occurrence of hip fracture.

**Table 5.2**  
**Agreement of the UNC Heart Failure (HF) Adjudications with Self-Reports among MRC Super Cohort Participants<sup>1</sup>**

Data as of: March 6, 2021

	Potential Case <sup>2</sup>	Case Eligible for UNC <sup>3</sup>		Case Processed by UNC <sup>3</sup>		Case Confirmed <sup>4</sup>		Case Denied		Case Unclassifiable	
		N	%	N	(%) <sup>5</sup>	N	(%) <sup>6</sup>	N	(%) <sup>6</sup>	N	(%) <sup>6</sup>
<b>Overall</b>	8949	8861	99%	8660	(98%)	6966	(80%)	1244	(14%)	449	(5%)
<b>By Self Report</b>											
Self-reported HF	4641	4592	99%	4411	(96%)	3732	(85%)	571	(13%)	108	(2%)
No HF self-report	4308	4269	99%	4249	(100%)	3234	(76%)	673	(16%)	341	(8%)

<sup>1</sup> The MRC Super Cohort includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS.

<sup>2</sup> Includes all self-reported or discovered heart failure cases and a portion of self-reported angina or other heart condition cases with 2 or more essential documents among MRC Super Cohort participants.

<sup>3</sup> Cases are eligible if they self-reported HF, or if not, were forwarded by another outcomes committee for possible HF; cases are sent to and processed by UNC when all required records have been received.

<sup>4</sup> Diagnosis was either definite or probable decompensated heart failure, or chronic stable heart failure.

<sup>5</sup> Percentages are relative to "Case Eligible for UNC".

<sup>6</sup> Percentages are relative to "Case Processed by UNC".

Table 5.3

## Source of Outcomes Confirmed by Central Adjudication for Self-Reported Outcomes in Extension Study 2010-2025

Data as of: March 6, 2021

	Centrally confirmed N	Reason for central investigation					
		Self-report same outcome		Self-report related outcome <sup>1</sup>		Self-report unrelated outcome <sup>2</sup>	
		N	%	N	%	N	%
<b>Cardiovascular</b>							
Clinical MI	856	444	52%	239	28%	173	20%
CABG	176	155	88%	17	10%	4	2%
PTCA	555	489	88%	51	9%	15	3%
Carotid artery disease	102	85	83%	11	11%	6	6%
Stroke	1099	985	90%	18	2%	96	9%
PAD	207	135	65%	59	29%	13	6%
DVT	549	415	76%	66	12%	68	12%
Pulmonary embolism	453	343	76%	54	12%	56	12%
Valvular heart disease	550	339	62%	143	26%	68	12%
<b>Cancers</b>							
Breast cancer	3471	3431	99%	24	1%	16	<1%
Ovarian cancer	275	250	91%	19	7%	6	2%
Endometrial cancer	460	417	91%	39	8%	4	1%
Cervical cancer	25	18	72%	6	24%	1	4%
Colorectal cancer	865	827	96%	27	3%	11	1%
Bladder/urinary tract cancer <sup>3</sup>	495	389	79%	99	20%	7	1%
Brain cancer	59	59	100%	0	0%	0	0%
Esophagus cancer	48	47	98%	1	2%	0	0%
Gallbladder/bile duct cancer	86	37	43%	49	57%	0	0%
Kidney cancer	224	215	96%	5	2%	4	2%
Leukemia	331	269	81%	49	15%	13	4%
Liver cancer	77	65	84%	10	13%	2	3%
Lung cancer	1220	1156	95%	37	3%	27	2%
Hodgkin's lymphoma	18	11	61%	5	28%	2	11%
Non-Hodgkin's lymphoma	581	411	71%	165	28%	5	1%
Melanoma	1166	1150	99%	14	1%	2	<1%
Multiple myeloma	210	182	87%	24	11%	4	2%
Pancreas cancer	382	363	95%	11	3%	8	2%
Stomach cancer	85	64	75%	17	20%	4	5%
Thyroid cancer	138	133	96%	3	2%	2	1%
Other genital organ cancer <sup>4</sup>	169	14	8%	154	91%	1	1%
<b>Fractures</b>							
Hip fracture	839	654	78%	164	20%	21	3%

<sup>1</sup> All cardiovascular outcomes are considered related, all cancers are considered related and all fractures are considered related.<sup>2</sup> Includes self-report of hospitalizations.<sup>3</sup> Cancers of the urinary tract include renal pelvis, ureter and urinary organs (NOS).<sup>4</sup> Does not include cancers of the ovary, endometrium or cervix; includes cancers of the vulva, vagina, uterus (NOS) and genital organs (NOS).

**Table 6.1**  
**Consent Status and Participant Characteristics for Long Life Study Participants<sup>1</sup> by Race/Ethnicity**

Data as of: March 6, 2021

	Total <sup>2</sup>		Hispanic/Latina		Non-Hispanic Black/African American		Non-Hispanic White		More than one Race	
	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %	N	Mean (SD) or %
Number eligible	14081		2211		5148		6482		184	
Phase 1: Age 72-79	9930	70.5	1405	63.5	3465	67.3	4880	75.3	137	74.5
Phase 2: Age 63-72	2651	18.8	730	33.0	1438	27.9	437	6.7	34	18.5
Phase 3: Age 64-98	1500	10.7	76	3.4	245	4.8	1165	18.0	13	7.1
Consented <sup>3</sup>	9246	65.7	1493	67.5	3044	59.1	4539	70.0	136	73.9
Completed visit 2012-2013 <sup>4</sup>	7875	85.2	1277	85.5	2483	81.6	3978	87.6	110	80.9
<b>LLS Participants</b>	<b>7875</b>	<b>100.0</b>	<b>1277</b>	<b>16.2</b>	<b>2483</b>	<b>31.5</b>	<b>3978</b>	<b>50.5</b>	<b>110</b>	<b>1.4</b>
Blood draw	7475	94.9	1238	96.9	2284	92.0	3827	96.2	101	91.8
Age at visit	7875	79.2 (6.8)	1277	75.4 (6.1)	2483	75.9 (6.0)	3978	82.5 (5.8)	110	77.8 (6.3)
63-69	724	9.2	236	18.5	379	15.3	97	2.4	9	8.2
70-79	3050	38.7	717	56.1	1433	57.7	829	20.8	60	54.5
80-89	3689	46.8	305	23.9	620	25.0	2717	68.3	35	31.8
≥90	412	5.2	19	1.5	51	2.1	335	8.4	6	5.5
Education										
0-8 years	112	1.4	71	5.6	24	1.0	17	0.4	0	0.0
Some high school	286	3.7	76	6.0	112	4.6	96	2.4	1	0.9
High school diploma/GED	1288	16.5	199	15.7	280	11.4	794	20.0	10	9.1
School after high school	3041	38.9	543	42.9	915	37.2	1530	38.6	46	41.8
College degree or higher	3099	39.6	377	29.8	1130	45.9	1525	38.5	53	48.2
Body-mass Index (BMI), kg/m <sup>2</sup>	7775	28.2 (5.9)	1265	28.0 (5.6)	2448	29.9 (6.2)	3928	27.3 (5.5)	107	28.3 (6.7)
Underweight (< 18.5)	112	1.4	13	1.0	23	0.9	72	1.8	3	2.8
Normal (18.5 - 24.9)	2378	30.6	415	32.8	513	21.0	1410	35.9	31	29.0
Overweight (25.0 - 29.9)	2799	36.0	467	36.9	868	35.5	1419	36.1	39	36.4
Obesity I (30.0 - 34.9)	1505	19.4	233	18.4	577	23.6	664	16.9	22	20.6
Obesity II (35.0 - 39.9)	633	8.1	88	7.0	300	12.3	240	6.1	4	3.7
Extreme Obesity III (≥ 40)	348	4.5	49	3.9	167	6.8	123	3.1	8	7.5

<sup>1</sup> Long Life Study participants are a subset of the Medical Records Cohort (MRC) which includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

<sup>2</sup> Separate columns for American Indian/Alaska Native (n=4), Asian or Native Hawaiian/Other Pacific Islander (n=1) and Other/Not Reported (n=22) race/ethnicities are not displayed due to small numbers, however these participants are included in the Total column.

<sup>3</sup> Percentage is relative to number eligible.

<sup>4</sup> Percentage is relative to consented.

**Table 6.1 (continued)**  
**Consent Status and Participant Characteristics for Long Life Study Participants<sup>1</sup> by Race/Ethnicity**  
 Data as of: March 6, 2021

	Total <sup>2</sup>		Hispanic/Latina		Non-Hispanic Black/African American		Non-Hispanic White		More than one Race	
	Mean (SD)		Mean (SD)		Mean (SD)		Mean (SD)		Mean (SD)	
	N	or %	N	or %	N	or %	N	or %	N	or %
Systolic blood pressure, mmHg	7864	125.9 (14.6)	1276	123.8 (13.7)	2478	127.1 (14.4)	3973	125.7 (14.8)	110	127.1 (16.8)
<=120	2962	37.7	566	44.4	851	34.3	1499	37.7	36	32.7
120 - 140	3796	48.3	564	44.2	1246	50.3	1918	48.3	56	50.9
>140	1106	14.1	146	11.4	381	15.4	556	14.0	18	16.4
Diastolic blood pressure, mmHg	7862	72.6 (8.9)	1275	72.2 (8.2)	2479	74.0 (8.8)	3971	71.8 (9.1)	110	73.3 (9.4)
<80	6073	77.2	1037	81.3	1807	72.9	3125	78.7	83	75.5
80-89	1535	19.5	209	16.4	567	22.9	730	18.4	24	21.8
≥90	254	3.2	29	2.3	105	4.2	116	2.9	3	2.7
Grip strength, kg	7274	17.8 (7.0)	1154	18.0 (6.3)	2329	20.0 (7.3)	3662	16.4 (6.7)	102	19.0 (7.2)
Repeated chair stands,	6949	0.35 (0.13)	1182	0.37 (0.1)	2178	0.34 (0.1)	3468	0.35 (0.1)	98	0.34 (0.1)
Walking pace, m/sec	6911	0.65 (0.29)	1124	0.73 (0.3)	2164	0.62 (0.3)	3502	0.65 (0.3)	97	0.60 (0.3)
Look AHEAD SPPB <sup>3</sup>	7022	1.3 (0.5)	1147	1.4 (0.5)	2238	1.4 (0.5)	3517	1.2 (0.5)	97	1.2 (0.5)
EPESE SPPB <sup>4</sup>	7102	7.9 (2.7)	1159	8.7 (2.6)	2260	7.8 (2.6)	3560	7.8 (2.8)	99	7.4 (2.7)

<sup>1</sup> Long Life Study participants are a subset of the Medical Records Cohort (MRC) which includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines.

<sup>2</sup> Separate columns for American Indian/Alaska Native (n=4), Asian or Native Hawaiian/Other Pacific Islander (n=1) and Other/Not Reported (n=22) race/ethnicities are not displayed due to small numbers, however these participants are included in the Total column.

<sup>3</sup> The Look AHEAD Short Physical Performance Battery (SPPB) ranges from 0 to 3, with higher scores indicating better physical performance.

<sup>4</sup> The Established Populations for the Epidemiologic Studies of the Eldery (EPESE) Short Physical Performance Battery (SPPB) ranges from 0 to 12, with higher scores indicating better physical performance.



**Table 6.2**  
**Participation and Vital Status: Long Life Study (LLS) Participants**

Data as of: March 6, 2021

<b>Vital Status/Participation</b>	<b>LLS Participants</b> (N=7875)	
	<b>N</b>	<b>%</b>
Deceased	2252	28.6
Alive: Current Participation <sup>1</sup>	4717	59.9
Alive: Recent Participation <sup>2</sup>	405	5.1
Stopped Follow-Up <sup>3</sup>	249	3.2
Lost to Follow-Up <sup>4</sup>	252	3.2

<sup>1</sup> Participants who have filled in a Form 33 within the last 15 months.

<sup>2</sup> Participants who last filled in a Form 33 between 15 and 24 months ago.

<sup>3</sup> Participants with codes 5 (no follow-up) or 8 (absolutely no follow-up) on Form 7 or 9.

<sup>4</sup> Participants not in any of the above categories.

**Table 6.3**  
**Verified Outcomes (Annualized Percentages)**  
**After Long Life Study (LLS) Visit by Age at Visit for LLS Participants**

Data as of: March 6, 2021; Events through March 6, 2021

Outcomes	Total	Age at Visit			
		63-69	70-79	80-89	≥ 90
<b>Number enrolled</b>	7875	723	3052	3688	412
<b>Mean follow-up (months) after LLS visit</b>	80.7	88.9	86.6	76.1	63.1
<b>Cardiovascular</b>					
CHD <sup>1</sup>	459 (0.87%)	15 (0.28%)	106 (0.48%)	294 (1.26%)	44 (2.03%)
CHD death <sup>2</sup>	288 (0.54%)	6 (0.11%)	49 (0.22%)	192 (0.82%)	41 (1.89%)
Clinical MI	278 (0.53%)	12 (0.22%)	70 (0.32%)	177 (0.76%)	19 (0.88%)
CABG/PTCA	196 (0.37%)	12 (0.22%)	75 (0.34%)	104 (0.44%)	5 (0.23%)
Carotid artery disease	25 (0.05%)	1 (0.02%)	9 (0.04%)	14 (0.06%)	1 (0.05%)
Heart failure, UNC <sup>3</sup>	513 (0.97%)	12 (0.22%)	110 (0.50%)	339 (1.45%)	52 (2.40%)
Stroke	455 (0.86%)	19 (0.35%)	124 (0.56%)	272 (1.16%)	40 (1.85%)
PAD	69 (0.13%)	1 (0.02%)	20 (0.09%)	44 (0.19%)	4 (0.18%)
DVT	186 (0.35%)	8 (0.15%)	66 (0.30%)	102 (0.44%)	10 (0.46%)
Pulmonary embolism	153 (0.29%)	8 (0.15%)	57 (0.26%)	80 (0.34%)	8 (0.37%)
Coronary disease <sup>4</sup>	738 (1.39%)	25 (0.47%)	185 (0.84%)	463 (1.98%)	65 (3.00%)
DVT/PE	272 (0.51%)	14 (0.26%)	102 (0.46%)	143 (0.61%)	13 (0.60%)
Aortic aneurysm	19 (0.04%)	2 (0.04%)	5 (0.02%)	11 (0.05%)	1 (0.05%)
Valvular heart disease	171 (0.32%)	4 (0.07%)	40 (0.18%)	110 (0.47%)	17 (0.78%)
<b>Total cardiovascular disease<sup>5</sup></b>	<b>1170 (2.21%)</b>	<b>41 (0.77%)</b>	<b>308 (1.40%)</b>	<b>705 (3.01%)</b>	<b>116 (5.35%)</b>
<b>Cancer</b>					
Breast cancer	199 (0.38%)	21 (0.39%)	110 (0.50%)	66 (0.28%)	2 (0.09%)
Invasive breast cancer	176 (0.33%)	16 (0.30%)	98 (0.45%)	59 (0.25%)	3 (0.14%)
In situ breast cancer	29 (0.05%)	6 (0.11%)	16 (0.07%)	7 (0.03%)	0 (0.00%)
Ovarian cancer	27 (0.05%)	1 (0.02%)	12 (0.05%)	12 (0.05%)	2 (0.09%)
Endometrial cancer <sup>6</sup>	15 (0.03%)	0 (0.00%)	6 (0.03%)	9 (0.04%)	0 (0.00%)
Colorectal cancer	81 (0.15%)	3 (0.06%)	20 (0.09%)	56 (0.24%)	2 (0.09%)
Other cancer <sup>7</sup>	460 (0.87%)	24 (0.45%)	170 (0.77%)	247 (1.06%)	19 (0.88%)
<b>Total cancer</b>	<b>681 (1.29%)</b>	<b>47 (0.88%)</b>	<b>278 (1.26%)</b>	<b>335 (1.43%)</b>	<b>21 (0.97%)</b>
<b>Fractures</b>					
Hip fracture	307 (0.58%)	6 (0.11%)	40 (0.18%)	222 (0.95%)	39 (1.80%)
<b>Deaths</b>					
Cardiovascular deaths	806 (1.52%)	14 (0.26%)	130 (0.59%)	532 (2.27%)	130 (6.00%)
Cancer deaths	399 (0.75%)	16 (0.30%)	121 (0.55%)	242 (1.03%)	20 (0.92%)
Other known cause	822 (1.55%)	16 (0.30%)	135 (0.61%)	556 (2.38%)	115 (5.31%)
Unknown cause	47 (0.09%)	2 (0.04%)	6 (0.03%)	29 (0.12%)	10 (0.46%)
Not yet adjudicated	178 (0.34%)	8 (0.15%)	35 (0.16%)	124 (0.53%)	11 (0.51%)
<b>Total death</b>	<b>2252 (4.25%)</b>	<b>56 (1.05%)</b>	<b>427 (1.94%)</b>	<b>1483 (6.34%)</b>	<b>286 (13.20%)</b>

<sup>1</sup> CHD includes clinical MI and CHD death.

<sup>2</sup> CHD death includes definite and possible CHD death.

<sup>3</sup> Definite or possible decompensated heart failure adjudicated by UNC.

<sup>4</sup> Coronary disease includes clinical MI, CHD death, UNC heart failure and CABG/PTCA.

<sup>5</sup> Total CVD does not include aortic aneurysm or valvular heart disease.

<sup>6</sup> Only women without a baseline hysterectomy are used to compute the annual rates of endometrial cancer.

<sup>7</sup> Only one report of "other cancer" is counted per woman; however, the first of each type is adjudicated. Excludes non-melanoma skin cancer.

**Table 6.4**  
**Verified Outcomes (Annualized Percentages)**  
**After Long Life Study (LLS) Visit by Race/Ethnicity<sup>1</sup> for LLS Participants**

Data as of: March 6, 2021; Events through March 6, 2021

Outcomes	Race/Ethnicity			
	Hispanic/ Latina	Non-Hispanic Black/African American	Non-Hispanic White	More than one Race
<b>Number enrolled</b>	1277	2483	3978	110
<b>Mean follow-up (months) after LLS visit</b>	86.8	83.0	77.2	77.3
<b>Cardiovascular</b>				
CHD <sup>2</sup>	47 (0.51%)	104 (0.61%)	300 (1.17%)	7 (0.99%)
CHD death <sup>3</sup>	26 (0.28%)	59 (0.34%)	198 (0.77%)	5 (0.71%)
Clinical MI	31 (0.34%)	60 (0.35%)	183 (0.71%)	3 (0.42%)
CABG/PTCA	22 (0.24%)	48 (0.28%)	125 (0.49%)	1 (0.14%)
Carotid artery disease	1 (0.01%)	7 (0.04%)	17 (0.07%)	0 (0.00%)
Heart failure, UNC <sup>4</sup>	43 (0.47%)	113 (0.66%)	350 (1.37%)	6 (0.85%)
Stroke	51 (0.55%)	119 (0.69%)	274 (1.07%)	9 (1.27%)
PAD	6 (0.06%)	25 (0.15%)	37 (0.14%)	1 (0.14%)
DVT	17 (0.18%)	70 (0.41%)	97 (0.38%)	2 (0.28%)
Pulmonary embolism	13 (0.14%)	61 (0.36%)	74 (0.29%)	5 (0.71%)
Coronary disease <sup>5</sup>	72 (0.78%)	165 (0.96%)	491 (1.92%)	9 (1.27%)
DVT/PE	25 (0.27%)	110 (0.64%)	132 (0.52%)	5 (0.71%)
Aortic aneurysm	2 (0.02%)	7 (0.04%)	10 (0.04%)	0 (0.00%)
Valvular heart disease	22 (0.24%)	17 (0.10%)	129 (0.50%)	3 (0.42%)
<b>Total cardiovascular disease<sup>6</sup></b>	<b>118 (1.28%)</b>	<b>285 (1.66%)</b>	<b>746 (2.91%)</b>	<b>18 (2.54%)</b>
<b>Cancer</b>				
Breast cancer	32 (0.35%)	77 (0.45%)	88 (0.34%)	2 (0.28%)
Invasive breast cancer	29 (0.31%)	66 (0.38%)	79 (0.31%)	2 (0.28%)
In situ breast cancer	4 (0.04%)	15 (0.09%)	10 (0.04%)	0 (0.00%)
Ovarian cancer	3 (0.03%)	7 (0.04%)	17 (0.07%)	0 (0.00%)
Endometrial cancer	2 (0.02%)	3 (0.02%)	10 (0.04%)	0 (0.00%)
Colorectal cancer	7 (0.08%)	19 (0.11%)	54 (0.21%)	1 (0.14%)
Other cancer	53 (0.57%)	129 (0.75%)	263 (1.03%)	12 (1.69%)
<b>Total cancer</b>	<b>91 (0.98%)</b>	<b>210 (1.22%)</b>	<b>366 (1.43%)</b>	<b>11 (1.55%)</b>
<b>Fractures</b>				
Hip Fracture	20 (0.22%)	22 (0.13%)	263 (1.03%)	2 (0.28%)
<b>Deaths</b>				
Cardiovascular deaths	62 (0.67%)	173 (1.01%)	559 (2.18%)	11 (1.55%)
Cancer deaths	39 (0.42%)	119 (0.69%)	233 (0.91%)	7 (0.99%)
Other known cause	76 (0.82%)	134 (0.78%)	597 (2.33%)	13 (1.83%)
Unknown cause	2 (0.02%)	12 (0.07%)	30 (0.12%)	3 (0.42%)
Not yet adjudicated	10 (0.11%)	49 (0.29%)	117 (0.46%)	2 (0.28%)
<b>Total death</b>	<b>189 (2.05%)</b>	<b>487 (2.83%)</b>	<b>1536 (6.00%)</b>	<b>36 (5.08%)</b>

<sup>1</sup> Long Life Study participants were selected from MRC participants which includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines. Outcome counts for American Indian/Alaska Native (n=4), Asian or Native Hawaiian/Other Pacific Islander (n=1) and Other/Not Reported (n=22) race/ethnicities are not displayed due to small numbers. See Table 6.3 for total counts of adjudicated outcomes.

<sup>2</sup> CHD includes clinical MI and CHD death.

<sup>3</sup> CHD death includes definite and possible CHD death.

<sup>4</sup> Definite or possible decompensated heart failure adjudicated by UNC

<sup>5</sup> Coronary disease includes clinical MI, CHD death, UNC heart failure and CABG/PTCA.

<sup>6</sup> Total CVD does not include aortic aneurysm or valvular heart disease.

**Table 6.5**  
**Self-Reported Outcomes (Annualized Percentages) After Long Life Study (LLS) Visit**  
**by Age at Visit and Race/Ethnicity<sup>1</sup> for LLS Participants Who Did Not Report a Prevalent Condition at Baseline**

Data as of: March 6, 2021; Events through March 6, 2021

Outcome	Total	Age at Visit			
		63-69	70-79	80-89	≥ 90
Number enrolled	7875	723	3052	3688	412
Mean follow-up (months) after LLS visit	78.1	84.8	83.4	74.2	62.1
Angina (hospitalized)	465 (0.91%)	34 (0.67%)	153 (0.72%)	257 (1.13%)	21 (0.98%)
Diabetes (treated)	703 (1.37%)	66 (1.29%)	308 (1.45%)	304 (1.33%)	25 (1.17%)
Hysterectomy	94 (0.18%)	14 (0.27%)	52 (0.25%)	28 (0.12%)	0 (0.00%)
Osteoarthritis	903 (1.76%)	99 (1.94%)	403 (1.90%)	362 (1.59%)	39 (1.83%)
Intestinal polyps	503 (0.98%)	99 (1.94%)	280 (1.32%)	120 (0.53%)	4 (0.19%)
Lupus	37 (0.07%)	4 (0.08%)	19 (0.09%)	13 (0.06%)	1 (0.05%)
Pills for hypertension	613 (1.20%)	72 (1.41%)	254 (1.20%)	262 (1.15%)	25 (1.17%)
COPD	793 (1.55%)	68 (1.33%)	299 (1.41%)	399 (1.75%)	27 (1.27%)
Macular degeneration	1168 (2.28%)	55 (1.08%)	379 (1.79%)	660 (2.89%)	74 (3.47%)
Dementia	1116 (2.18%)	32 (0.63%)	262 (1.23%)	718 (3.15%)	104 (4.88%)
Parkinson's disease	110 (0.21%)	8 (0.16%)	45 (0.21%)	53 (0.23%)	4 (0.19%)

Outcome	Race/Ethnicity		
	Hispanic/Latina	Non-Hispanic Black/African American	Non-Hispanic White
Number enrolled	1277	2483	3978
Mean follow-up (months) after LLS visit	83.9	80.1	75.1
Angina (hospitalized)	59 (0.66%)	144 (0.87%)	251 (1.01%)
Diabetes (treated)	117 (1.31%)	237 (1.43%)	333 (1.34%)
Hysterectomy	21 (0.24%)	31 (0.19%)	41 (0.16%)
Osteoarthritis	143 (1.60%)	295 (1.78%)	453 (1.82%)
Intestinal polyps	120 (1.34%)	207 (1.25%)	172 (0.69%)
Lupus	8 (0.09%)	12 (0.07%)	17 (0.07%)
Pills for hypertension	131 (1.47%)	135 (0.81%)	335 (1.35%)
COPD	114 (1.28%)	251 (1.51%)	420 (1.69%)
Macular degeneration	167 (1.87%)	274 (1.65%)	708 (2.84%)
Dementia	135 (1.51%)	243 (1.47%)	720 (2.89%)
Parkinson's disease	20 (0.22%)	32 (0.19%)	56 (0.22%)

<sup>1</sup> Long Life Study participants were selected from MRC participants which includes all WHI Hormone Trial participants and all Non-Hispanic Black/African American and Hispanic/Latina participants (identified from race/ethnicity collected on Form 2 at baseline) from the CT and OS. However, race/ethnicity is presented using the imputed Form 41 data and following the WHI Race/Ethnicity Task Force guidelines. Outcome counts for American Indian/Alaska Native (n=4), Asian or Native Hawaiian/Other Pacific Islander (n=1) and Other/Not Reported (n=22) race/ethnicities are not displayed due to small numbers.

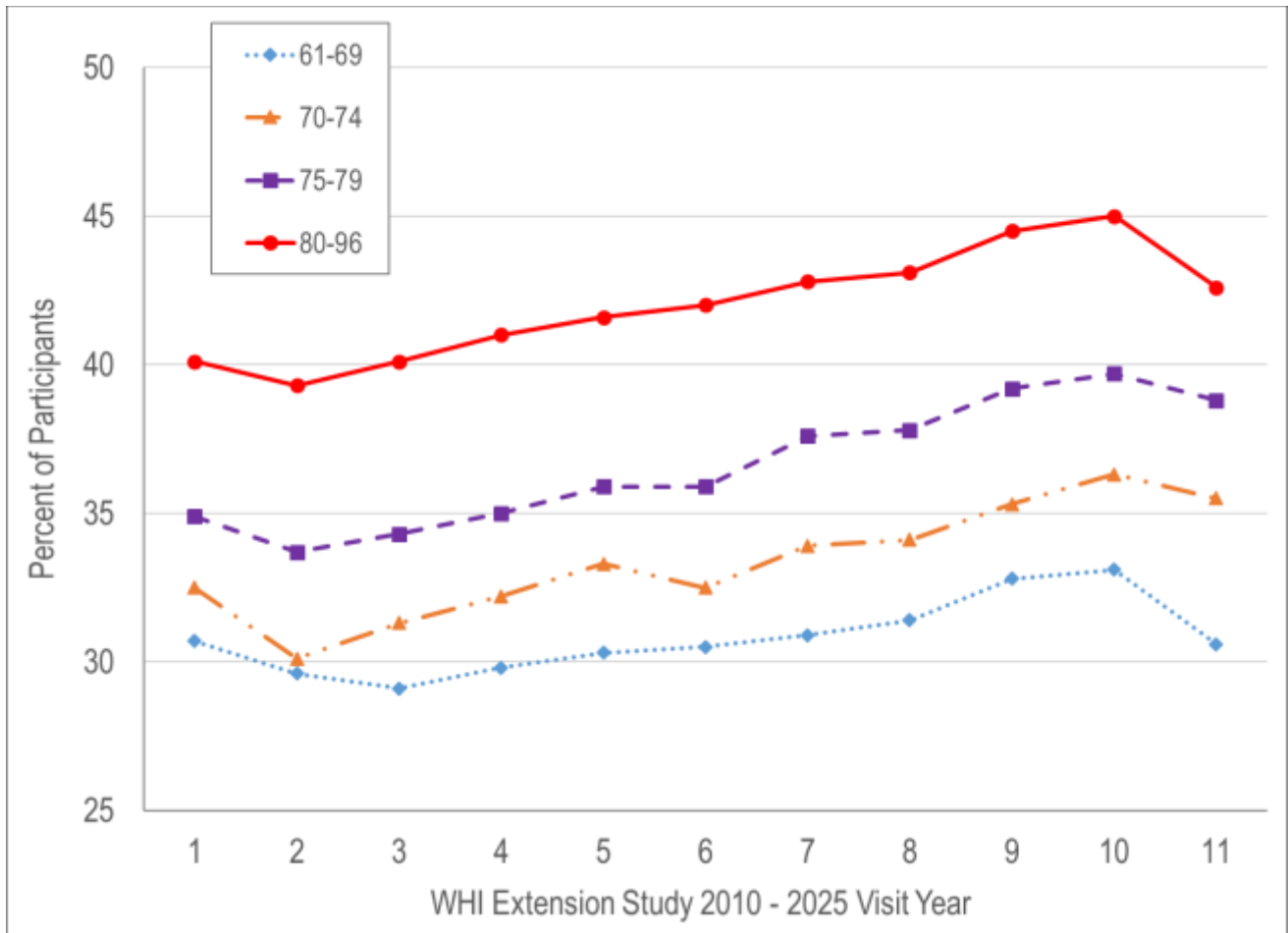
**Table 7.1**  
**Number of Falls per Participant During Extension Study 2010-2025 by Visit Year**

Data as of: March 6, 2021; Events between September 30, 2010 and March 6, 2021

Number of falls	Extension Study 2010-2025 Visit Year										
	<b>1</b> (N=75,553)	<b>2</b> (N=83,161)	<b>3</b> (N=80,724)	<b>4</b> (N=76,931)	<b>5</b> (N=74,443)	<b>6</b> (N=68,441)	<b>7</b> (N=65,622)	<b>8</b> (N=62,146)	<b>9</b> (N=59,219)	<b>10</b> (N=52,833)	<b>11</b> (N=4,793)
	%	%	%	%	%	%	%	%	%	%	%
None	64.8	66.2	65.7	65.0	64.3	64.5	63.6	63.5	62.3	61.8	63.4
1	20.9	19.7	19.7	20.2	20.4	20.2	20.6	20.8	21.0	21.4	20.7
2	9.5	9.0	9.3	9.4	9.5	9.3	9.6	9.5	9.9	9.8	9.0
≥3	4.9	5.1	5.3	5.4	5.7	6.0	6.2	6.3	6.9	6.9	7.0

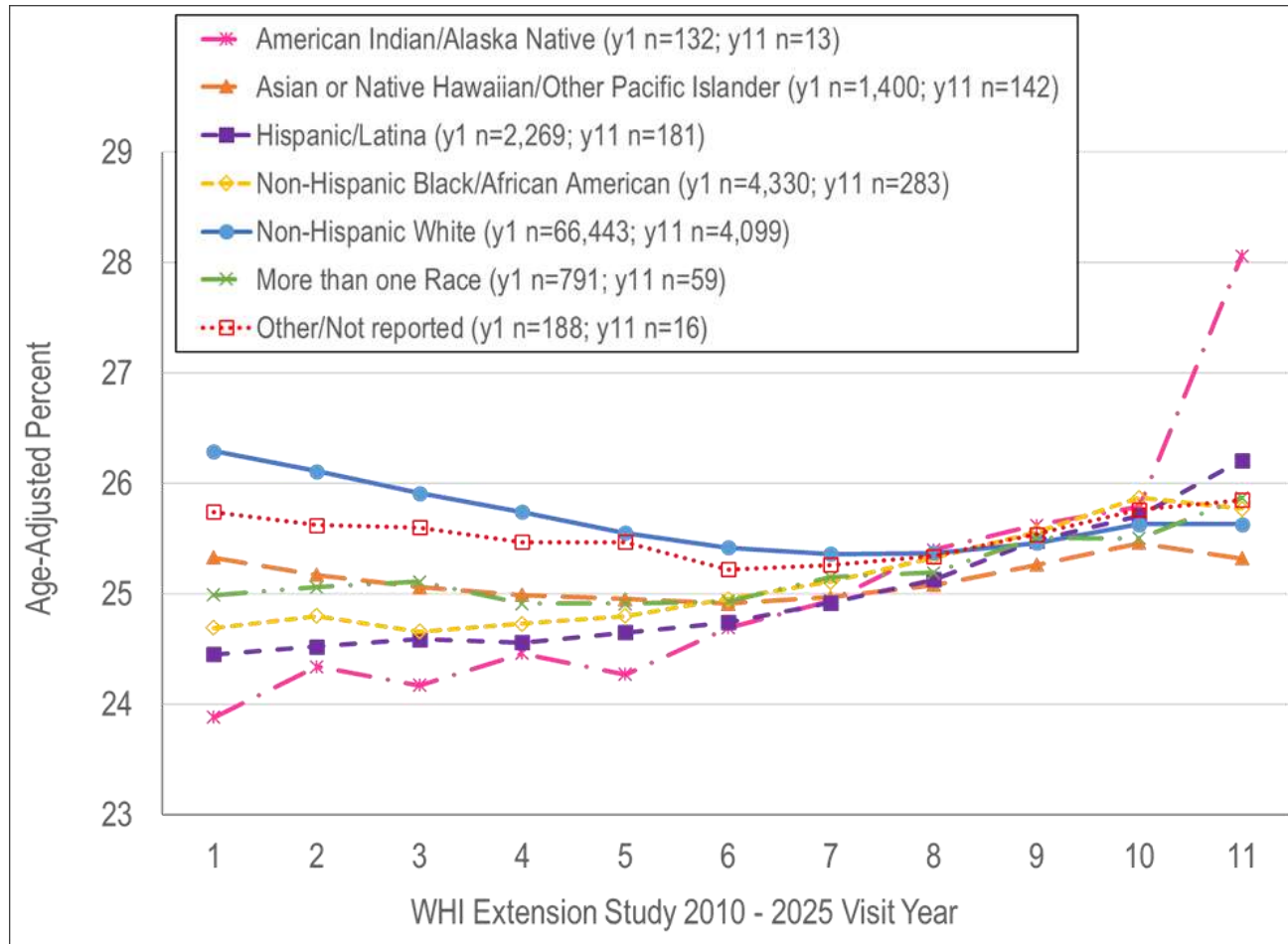
**Figure 7.1**  
**Percent of Participants with Falls During Extension Study 2010-2025**  
**by Visit Year and Age at the Start of Extension Study 2010-2025**

Data as of: March 6, 2021; Events between September 30, 2010 and March 6, 2021



**Figure 7.2**  
**Age-Adjusted<sup>1</sup> Percent of Participants with Falls During Extension Study 2010-2025**  
**by Visit Year and Race/Ethnicity**

Data as of: March 6, 2021; Events between September 30, 2010 and March 6, 2021



<sup>1</sup> Age at the start of Extension Study 2010-2025. Percentages for each race/ethnicity are age-adjusted to the overall age distribution at each time point.

**Table 8.1**  
**WHI Manuscript Stages**

<b>Stage #</b>	<b>Definition</b>	<b>Number</b>
12*	Published	2080
11	In press / accepted by journal	9
10	Submitted to journal	17
9	Final manuscript approved by P&P Committee	350
8	Final manuscript submitted to P&P Committee	35
7	Draft manuscript	27
6	Analysis completed	40
5	Analysis in progress	48
4	Analysis proposed	7
2 & 3	Approved proposal	1250
<b>Total</b>		<b>3,863</b>

\*Only Stage 12 papers published between March 2020 and February 2021 are included in Table 8.2



**Table 8.2**  
**Publications March 2020 - February 2021**

MS#	Title	Authors	Focus	Reference	Study #
1506	Cardiovascular outcomes in relation to antihypertensive medication use in women with and without cancer: Results from the Women's Health Initiative	Reding, Aragaki, Cheng, Wassertheil-Smoller, Barac, Chubak, Limacher, Hundley, D'Agostino, Vitolins, Habel, Chow, Jackson, Chen, Morgenroth, Barrington, et al.	Gen	Oncologist. 2020 Apr 6. doi: 10.1634/theoncologist.2019-0977. [Epub ahead of print]	
1755	Reproductive history and osteoarthritis in the Women's Health Initiative	Wang, Zawadzki, Hedlin, LeBlanc, Budrys, Van Horn, Gass, Westphal, Stefanick	OS	Scand J Rheumatol. 2020 Aug 6:1-10. doi: 10.1080/03009742.2020.1751271. Online ahead of print.	
1945	Chocolate candy and incident invasive cancer risk in the Women's Health Initiative: An observational prospective analysis	Greenberg, Neuhouser, Tinker, Lane, Paskett, Van Horn, Wassertheil-Smoller, Shikany, Qi, Manson, Sealy-Jefferson	OS	J Acad Nutr Diet. 2020 Aug 3:S2212-2672(20)30558-X. doi: 10.1016/j.jand.2020.06.014. Online ahead of print.	
2207	Relationship between dietary magnesium intake and incident heart failure among older women: The WHI	Wu, Huang, Taveira, Roberts, Martin, Wellenius, Johnson, Manson, Liu, Eaton	OS	J Am Heart Assoc. 2020 Apr 7;9(7):e013570. doi: 10.1161/JAHA.119.013570. Epub 2020 Mar 20.	
2261	Dietary Intakes of Women's Health Initiative Long Life Study Participants Falls Short of the Dietary Reference Intakes	Beasley, Rillamas-Sun, Tinker, Wylie-Rosett, Mossavar-Rahmani, Datta, Caan, LaCroix	Gen	J Acad Nutr Diet. 2020 Sep;120(9):1530-1537. doi: 10.1016/j.jand.2020.05.001. Epub 2020 Jul 14.	AS340, W64
2306	The association between cigarette smoking, cancer screening, and cancer stage: a prospective study of the women's health initiative observational cohort	Tang, Stefanick, Ally, Kurian, Tang, David, Chlebowski, Hou, Lane, Patel, Tindle	OS	BMJ Open. 2020 Aug 13;10(8):e037945. doi: 10.1136/bmjopen-2020-037945	
2422	The Women's Health Initiative Estrogen-Along Trial had differential disease and medical expenditure consequences across age groups	Donneyong, Chang, Roth, Guilds, Ankrah, Najafzadeh, Xu, Chlebowski, Margolis, Manson	Gen	Menopause. 2020 Mar 2. doi: 10.1097/GME.0000000000001517. [Epub ahead of print]	
2532	Metabolic signatures associated with western and prudent dietary patterns in women	Chandler, Balasubramanian, Paynter, Giulianini, Fung, Tinker, Snetselaar, Liu, Eaton, Tobias, Tabung, Manson, Giovannucci, Clish, Rexrode	Gen	Am J Clin Nutr. 2020 Jun 10:nqaa131. doi:10.1093/ajcn/nqaa131. Online ahead of print	BAA24

**Table 8.2**  
**Publications March 2020 - February 2021**

MS#	Title	Authors	Focus	Reference	Study #
2632	Rural-urban residence, stroke risk and severity in postmenopausal women: The Women's Health Initiative	Sealy-Jefferson, Roseland, Cote, Lehman, Whitsel, Booza, Simon	Gen	Womens Health Rep (New Rochelle). 2020 Sep 9;1(1):326-333. doi: 10.1089/whr.2020.0034. eCollection 2020.	AS464
2824	Associations of number of daily eating occasions with type 2 diabetes risk in the Women's Health Initiative Dietary Modification Trial	Neuhouser, Wertheim, Perrigue, Hingle, Tinker, Shikany, Johnson, Waring, Seguin, Vitolins, Schnall, Snetselaar, Thomson	CT	Curr Dev Nutr. 2020 Jul 21;4(8):nzaa126. doi: 10.1093/cdn/nzaa126. eCollection 2020 Aug	
2850	Heart rate, brain imaging biomarkers and cognitive impairment in older ( $\geq 63$ Years) women	Haring, Liu, Rapp, Shimbo, Padula, Mozhui, Li, Espeland, Wassertheil-Smoller	CT	Am J Cardiol. 2020 May 26:S0002-9149(20)30540-3. doi: 10.1016/j.amjcard.2020.05.030. Online ahead of print	AS39
2884	Associations of angiotensin-converting enzyme inhibitor or angiotensin receptor blocker use with colorectal cancer risk in the Women's Health Initiative	Brasky, Flores, Larson, Newton, Shadyab, Watanabe, Lane, Thomson, LaCroix	Gen	Cancer Epidemiol Biomarkers Prev. 2021 Feb 24:cebp.1401.2020. doi: 10.1158/1055-9965.EPI-20-1401. Online ahead of print.	
2980	Association of sickle cell trait with incidence of coronary heart disease among african american individuals	Hyacinth, Franceschini, Seals, Irvin, Naik, Alonso, Burke, Carty, Zakai, Manson, Reiner	Gen	JAMA Netw Open. 2021 Jan 4;4(1):e2030435. doi: 10.1001/jamanetworkopen.2020.30435	M24, M5
2983	Barriers to eating are associated with poor physical function in older women	Neuhouser, Hunt, Van Horn, Shikany, Stefanick, Johnson, Brunner, Cannell, Hatsu, Tinker	Gen	Prev Med. 2020 Aug 12;139:106234. doi: 10.1016/j.ypmed.2020.106234. Online ahead of print	
3028	Association of menopausal hormone therapy with breast cancer incidence and mortality during long-term follow-up of the Women's Health Initiative Randomized Clinical Trials	Chlebowski, Anderson, Aragaki, Manson, Stefanick, Pan, Barrington, Kuller, Simon, Lane, Johnson, Rohan, Gass, Cauley, Paskett, Sattari, et al.	CT	JAMA. 2020 Jul 28;324(4):369-380. doi: 10.1001/jama.2020.9482	

**Table 8.2**  
**Publications March 2020 - February 2021**

MS#	Title	Authors	Focus	Reference	Study #
3059	Multi-ethnic genome-wide association study of decomposed cardioelectric phenotypes illustrates strategies to identify and characterize evidence of shared genetic effects for complex traits	Baldassari, Sitlani, Highland, Arking, Buyske, Whitsel, Reiner, Kooperberg, Avery, Soliman, North, Peters	OS	Circ Genom Precis Med. 2020 Aug;13(4):e002680. doi: 10.1161/CIRCGEN.119.002680. Epub 2020 Jun 30.	AS224, AS264, BAA3, M13, M5, W63
3074	Metabolomic effects of hormone therapy and associations with coronary heart disease among postmenopausal women	Balasubramanian, Demler, Paynter, Sheehan, Liu, Manson, Clish, Rexrode	Gen	Circ Genom Precis Med. 2020 Nov 3. doi: 10.1161/CIRCGEN.119.002977. Online ahead of print.	BAA24
3100	Association between post-stroke disability and 5-year hip-fracture risk: The Women's Health Initiative	Northius, Crandall, Margolis, Diem, Ensrud, Lakshminarayan	Gen	J Stroke Cerebrovasc Dis. 2020 Aug;29(8):104976. doi: 10.1016/j.jstrokecerebrovasdis.2020.104976. Epub 2020 Jun 10.	
3164	Associations of social, physical, and financial factors with diet quality among older, community-dwelling women	Shikany, Manson, Shadyab, Garcia, Lewis, Neuhouser, Tinker, Beasley, Beresford, Zaslavsky, Vitolins, Sealy-Jefferson, Bae	Gen	Menopause. 2020 Mar 2. doi: 10.1097/GME.0000000000001528. [Epub ahead of print]	W64
3166	Association between prediagnosis depression and mortality among postmenopausal women with colorectal cancer	Liang, Hendryx, Qi, Lane, Luo	Gen	PLoS One. 2020 Dec 31;15(12):e0244728. doi: 10.1371/journal.pone.0244728. eCollection 2020.	AS370
3181	Risk of metabolic syndrome and metabolic phenotypes in relation to biomarker-calibrated estimates of energy and protein intakes: an investigation from the Women's Health Initiative	Vasbinder, Tinker, Neuhouser, Pettinger, Hale, Di, Zaslavsky, Hayman, Liu, Wang, Scherman, Stefanick, Barrington, Eaton, Reding, Nicklas, et al.	OS	Am J Clin Nutr. 2020 Dec 31:nqaa334. doi: 10.1093/ajcn/nqaa334. Online ahead of print.	W64
3187	Prospective association of obstructive sleep apnea risk factors with heart failure and its subtypes in postmenopausal women: The Women's Health Initiative	Koo, Gorski, Manson, Allison, LaMonte, Roberts, Shadyab, Eaton	Gen	J Clin Sleep Med. 2020 Mar 25. doi: 10.5664/jcsm.8438. [Epub ahead of print]	
3221	Diet quality indices and risk of metabolic syndrome among postmenopausal women of Mexican ethnic descent in the Women's Health Initiative Observational Study	Santiago-Torres, Shi, Tinker, Lampe, Allison, Barrington, Crane, Garcia, Hayden, Isasi, Valdiviezo, Martin, Neuhouser	Gen	Nutr Healthy Aging. 2020 Nov 3;5(4):261-272. doi: 10.3233/NHA-190076.	

**Table 8.2**  
**Publications March 2020 - February 2021**

MS#	Title	Authors	Focus	Reference	Study #
3260	Association between selenium intake and breast cancer risk: Results from the Women's Health Initiative	Guo, Hendryx, Liang, Manson, He, Vitolins, Li, Luo	Gen	Breast Cancer Res Treat. 2020 Jun 30. doi: 10.1007/s10549-020-05764-6. Online ahead of print.	
3266	Risk of breast cancer associated with estrogen DNA adduct biomarker	Reding, Han, Whittington, Langford, Rohan, Chlebowski, Cheng, Ho, Lee, Barrington, Tinker	Gen	Cancer Epidemiol Biomarkers Prev. 2020 Oct;29(10):2096-2099. doi: 10.1158/1055-9965.EPI-20-0133. Epub 2020 Jul 22.	AS321
3309	Racial/Ethnic disparities in physical function before and after total knee arthroplasty among women in the United States	Cavanaugh, Rauh, Thompson, Alcaraz, Mihalko, Bird, Corbie-Smith, Rosal, Li, Shadyab, Gilmer, LaCroix	Gen	JAMA Netw Open. 2020 May 1;3(5):e204937. doi: 10.1001/jamanetworkopen.2020.4937	W35
3312	Methylome-wide association study of central adiposity implicates genes involved in immune and endocrine systems	Justice, Chittoor, Gondalia, Melton, Lim, Hou, Whitsel, North, Baccarelli, Conneely	CT	Epigenomics. 2020 Sep 9. doi: 10.2217/epi-2019-0276. Online ahead of print.	AS315
3317	Sleep characteristics and risk of ovarian cancer among postmenopausal women	Liang, Harris, Hendryx, Shadyab, Hale, Li, Crane, Cespedes Feliciano, Stefanick, Luo	Gen	Cancer Prev Res (Phila). 2020 Sep 11:canprevres.0174.2020. doi: 10.1158/1940-6207.CAPR-20-0174. Online ahead of print.	
3341	Insulin resistance and breast cancer incidence and mortality in postmenopausal women in the Women's Health Initiative	Pan, Goodwin, Mortimer, Nelson, Gunter, Rohan, Vitolins, Adams-Campbell, Ho, Cheng, Manson	Gen	Cancer. 2020 Jun 12. doi: 10.1002/cncr.33002. Online ahead of print.	
3360	Association of cardiovascular health and epigenetic age acceleration	Pottinger, Khan, Zheng, Zhang, Tindle, Allison, Wells, Shadyab, Nassir, Martin, Manson, Greenland, Baccarelli, Whitsel, Hou	CT	Clin Epigenetics. 2021 Feb 25;13(1):42. doi: 10.1186/s13148-021-01028-2.	AS315
3369	Erythrocyte omega-3 index, ambient fine particle exposure and brain aging	Chen, Xun, Kaufman, Hayden, Espeland, Whitsel, Serre, Vizuete, Orchard, Harris, Wang, Chui, Chen, He	WHIMS	Neurology. 2020 Jul 15:10.1212/WNL.00000000000010074. doi: 10.1212/WNL.00000000000010074. Online ahead of print	AS183, AS252, AS39

**Table 8.2**  
**Publications March 2020 - February 2021**

MS#	Title	Authors	Focus	Reference	Study #
3389	The association of methotrexate, sulfasalazine, and hydroxychloroquine use with fracture in postmenopausal women with rheumatoid arthritis: Findings from the Women's Health Initiative	Carbone, Vasan, Elam, Gupta, Tolaymat, Crandall, Wactawski-Wende, Johnson	Gen	JBMR Plus. 2020 Aug 18;4(10):e10393. doi: 10.1002/jbm4.10393. eCollection 2020 Oct.	
3433	Protein intake by source and breast cancer incidence and mortality: The Women's Health Initiative	Chlebowski, Mortimer, Neuhouser, Prentice, Van Horn, Rohan, Manson, Lane	Gen	JNCI Cancer Spectr. 2020 Nov 7;4(6):pkaa101. doi: 10.1093/jncics/pkaa101. eCollection 2020 Dec.	
3449	Association of prediagnostic frailty, change in frailty status, and mortality after cancer diagnosis in the Women's Health Initiative	Cespedes Feliciano, Hohensee, Rosko, Anderson, Paskett, Zaslavsky, Wallace, Caan	OS	JAMA Netw Open. 2020 Sep 1;3(9):e2016747. doi: 10.1001/jamanetworkopen.2020.16747.	AS370, W35
3453	Association of sedentary time and incident heart failure hospitalization in postmenopausal women	LaMonte, Larson, Manson, Bellettiere, Lewis, Bea, Johnson, LaCroix, Klein, Noel, Stefanick, Wactawski-Wende, Eaton	Gen	Circ Heart Fail. 2020 Nov 24:CIRCHEARTFAILURE120007508. doi: 10.1161/CIRCHEARTFAILURE.120.007508. Online ahead of print.	AS510
3457	Sociodemographic and metabolic risk characteristics associated with metabolic weight categories in the Women's Health Initiative (WHI)	Hsu, Ames, Xie, Peterson, Garcia, Going, Wong, Anton-Culver	Gen	Cardiovasc Endocrinol Metab. 2020 May 15;9(2):42-48. doi: 10.1097/XCE.0000000000000194. eCollection 2020 Jun	
3460	Does the Hispanic Mortality Advantage Vary by Marital Status Among Postmenopausal Women in the Women's Health Initiative?	Flores, Ruiz, Butler, Sbarra, Garcia, Kohler, Crane, Corbie-Smith, Benavente, Kroenke, Saquib, Thomson	OS	Ann Behav Med. 2021 Jan 15:kaaa113. doi: 10.1093/abm/kaaa113. Online ahead of print	
3464	Alignment of dietary patterns with the Dietary Guidelines for Americans 2015-2020 and risk of all-cause and cause-specific mortality in the Women's Health Initiative Observational Study	George, Reedy, Feliciano, Aragaki, Caan, Kahle, Manson, Rohan, Snetselaar, Tinker, Van Horn, Neuhouser	OS	Am J Epidemiol. 2020 Dec 16:kwaa268. doi: 10.1093/aje/kwaa268. Online ahead of print.	
3494	The carbon isotope ratios of serum amino acids in combination with participant characteristics can be used to estimate added sugar intake in a controlled feeding study of US postmenopausal women	O'Brien, Yun, Tinker, Neuhouser, Schoeller, Mossavar-Rahmani, Snetselaar, Van Horn, Eaton, Prentice, Lampe	Gen	J Nutr. 2020 Jul 25:nxaa195. doi: 10.1093/jn/nxaa195. Online ahead of print.	AS423

**Table 8.2**  
**Publications March 2020 - February 2021**

MS#	Title	Authors	Focus	Reference	Study #
3508	Postdiagnosis physical activity: Association with long-term fatigue and sleep disturbance in older adult breast cancer survivors	Vasbinder, Reding, Wang, Han, Zaslavsky, Langford, Cespedes Feliciano, Barrington, Paskett	Gen	Clin J Oncol Nurs. 2020 Aug 1;24(4):381-391. doi: 10.1188/20.CJON.381-391.	AS370
3509	Serial bone density measurement and incident fracture risk discrimination in postmenopausal women	Crandall, Larson, Wright, Laddu-Patel, Stefanick, Kaunitz, Watts, Wactawski-Wende, WOMack, Johnson, Carbone, Jackson, Ensrud	Gen	JAMA Intern Med. Published online July 27, 2020. doi:10.1001/jamainternmed.2020.2986	
3514	PM 2.5 associated with gray matter atrophy reflecting increased Alzheimers risk in older women	Younan, Wang, Casanova, Barnard, Gaussoin, Saldana, Petkus, Resnick, Manson, Vizuete, Henderson, Sachs, Salinas, Gatz, Espeland, Serre, et al.	CT	Neurology. 2020 Nov 18;10.1212/WNL.00000000000011149. doi: 10.1212/WNL.00000000000011149. Online ahead of print.	AS252
3526	The association between weight-promoting medication use and weight gain in postmenopausal women: findings from the Women's Health Initiative	Stanford, Cena, Biino, Umoren, Jimenez, Freeman, Shadyab, Wild, WOMack, Banack, Manson	Gen	Menopause. 2020 Jul 13. doi: 10.1097/GME.0000000000001589. Online ahead of print.	
3537	Social support, social network size, social strain, stressful life events, and coronary heart disease in women with type 2 diabetes: A cohort study based on the Women's Health Initiative	Jonasson, Hendryx, Luo, WOMack, Valdiviezo, Shadyab, Sealy-Jefferson, Liu, Lin, Lawesson, Kroenke, Kelley, Garcia, Cene, Santosa	Gen	Diabetes Care. 2020 Jun 4;dc192065. doi: 10.2337/dc19-2065. Online ahead of print.	
3558	Physical activity and risk of bladder cancer among postmenopausal women	Li, Hendryx, Xun, He, Shadyab, Lane, Nassir, Stefanick, Wactawski-Wende, Pal, Luo	Gen	Int J Cancer. 2020 May 10. doi: 10.1002/ijc.33042. Online ahead of print.	
3560	Cardio-metabolic risk factors and survival after cancer in the Women's Health Initiative	Simon, Hastert, Barac, Banack, Caan, Chlebowski, Foraker, Hovsepian, Liu, Luo, Manson, Neuhouser, Okwuosa, Pan, Ruterbusch, Shadyab, et al.	Gen	Cancer. 2020 Nov 5. doi: 10.1002/cncr.33295. Online ahead of print.	AS370
3562	Prevalence and penetrance of pathogenic variants in cancer susceptibility genes among women with postmenopausal breast cancer in the Women's Health Initiative	Kurian, Bernhisel, Larson, Caswell-Jin, Shadyab, Ochs-Balcom, Stefanick	Gen	JAMA .2020 Mar 10;323(10):995-997. doi: 10.1001/jama.2020.0229.	AS508

**Table 8.2**  
**Publications March 2020 - February 2021**

MS#	Title	Authors	Focus	Reference	Study #
3592	The association between type 2 diabetes mellitus and bladder cancer risk among postmenopausal women	Li, Hendryx, Xun, He, Shadyab, Qi, Pan, Luo	Gen	Cancer Causes Control. 2020 May;31(5):503-510. doi: 10.1007/s10552-020-01294-0. Epub 2020 Mar 19.	
3597	Association of adverse pregnancy outcomes with risk of atherosclerotic cardiovascular disease in postmenopausal women	Sondergaard, Hlatky, Stefanick, Vittinghoff, Nah, Allison, Gemmill, Van Horn, Park, Salmoirago-Blotcher, Sattari, Sealy-Jefferson, Shadyab, Valdiviezo, Manson, Parikh, et al.	Gen	JAMA Cardiol. 2020 Sep 16:e204097. doi: 10.1001/jamacardio.2020.4097. Online ahead of print.	
3609	Association of major dietary protein sources with all-cause and cause-specific mortality: Prospective cohort study	Sun, Liu, Snetselaar, Wallace, Shadyab, Kroenke, Haring, Howard, Shikany, Valdiviezo, Bao	Gen	J Am Heart Assoc. 2021 Feb;10(5):e015553. doi: 10.1161/JAHA.119.015553. Epub 2021 Feb 24.	
3610	Resilience and CVD-protective health behaviors in older women: Examining racial and ethnic differences in a cross-sectional analysis of the Women's Health Initiative Extension Study	Springfield, Qin, Hedlin, Eaton, Rosal, Taylor, Staudinger, Stefanick	OS	Nutrients. 2020 Jul 16;12(7):2107. doi: 10.3390/nu12072107.	
3612	Dual-outcome intention-to-treat analyses in the Women's Health Initiative Randomized Controlled Hormone Therapy Trials	Prentice, Aragaki, Chlebowski, Zhao, Anderson, Rossouw, Wallace, Banack, Shadyab, Qi, Snively, Gass, Manson	CT	Am J Epidemiol. 2020 Sep 1;189(9):972-981. doi: 10.1093/aje/kwaa033.	
3640	Associations of accelerometer-measured physical activity and physical activity-related cancer incidence in older women: results from the OPACH Study	Parada Jr., McDonald, Bellettiere, Evenson, LaMonte, LaCroix	OS	Br J Cancer. 2020 Mar 5. doi: 10.1038/s41416-020-0753-6. [Epub ahead of print]	AS286
3652	The severity of vasomotor symptoms and number of menopausal symptoms in postmenopausal women and select clinical health outcomes in the Women's Health Initiative Calcium and Vitamin D randomized clinical trial	Nudy, Jiang, Stefanick, Robbins, Schnatz, Wild, Wactawski-Wende, Shadyab, Manson, LeBlanc	CT	Menopause. 2020 Nov;27(11):1265-1273. doi: 10.1097/GME.0000000000001667.	
3658	Healthy Lifestyle and Clonal Hematopoiesis of Indeterminate Potential: Results From the Women's Health Initiative	Haring, Reiner, Liu, Tobias, Whitsel, Berger, Desai, Wassertheil-Smoller, LaMonte, Hayden, Bick, Natarajan, Stefanick, Simon, Eaton, Kooperberg, et al.	Gen	J Am Heart Assoc. 2021 Feb;10(5):e018789. doi: 10.1161/JAHA.120.018789. Epub 2021 Feb 23	AS564

**Table 8.2**  
**Publications March 2020 - February 2021**

MS#	Title	Authors	Focus	Reference	Study #
3660	Healthy lifestyle and risk of incident heart failure with preserved and reduced ejection fraction in postmenopausal women: The Women's Health Initiative Study	Noel, LaMonte, Roberts, Pearlman, Banack, Allison, Shadyab, Haring, Laddu-Patel, Martin, Nguyen, Manson, Eaton	Gen	Prev Med. 2020 May 28;138:106155. doi: 10.1016/j.ypmed.2020.106155. Online ahead of print.	
3662	Walking volume and speed are inversely associated with incidence of treated hypertension in postmenopausal women	Miller, Wactawski-Wende, LaMonte, Manson, Haring, Hovey, Laddu-Patel, Shadyab, Wild, Bea, Tinker, Martin, Garcia, Nguyen, Andrews, Eaton, et al.	Gen	Hypertension. 2020 Nov;76(5):1435-1443. doi: 10.1161/HYPERTENSIONA.120.15839. Epub 2020 Sep 28.	
3667	Comparison of mortality among participants of Women's Health Initiative Trials with screening-detected breast cancers vs interval breast cancers	Irvin, Zhang, Simon, Chlebowski, Luoh, Shadyab, Krok-Schoen, Tabung, Qi, Stefanick, Schedin, Jindal	CT	JAMA Netw Open. 2020 Jun 1;3(6):e207227. doi: 10.1001/jamanetworkopen.2020.7227	AS370
3677	Race-specific associations of 25-hydroxyvitamin D and parathyroid hormone with cardiometabolic biomarkers among US white and black postmenopausal women	Xia, Tu, Manson, Nan, Shadyab, Bea, Cheng, Hou, Song	OS	Am J Clin Nutr. 2020 May 29;nqaa121.doi: 10.1093/ajcn/nqaa121. Online ahead of print	AS325
3715	African ancestry and triple-negative breast cancer in the Women's Health Initiative	Jones, Pan, Chlebowski, Nelson, Kruper	Gen	Am Surg. 2020 Sep 10;3134820949518. doi: 10.1177/0003134820949518. Online ahead of print.	W35
3718	Association of visual impairment with risk of incident dementia in a Women's Health Initiative population	Pershing, Tran, Stefanick, Henderson, Rapp, Armstrong, Chen, Espeland, Gower, Li, Shadyab, Stone	CT	JAMA Ophthalmol. 2020 Apr 16;e200959. doi: 10.1001/jamaophthalmol.2020.0959.	AS233, AS244, AS39, AS62, W35
3730	40 year trends in menopausal hormone therapy use and breast cancer incidence among postmenopausal Black and White women	Chlebowski, Aragaki, Anderson, Prentice	N/A	Cancer. 2020 Mar 25. doi: 10.1002/cncr.32846. [Epub ahead of print]	
3766	The relationship of accelerometer-assessed standing time with and without ambulation and mortality: The WHI OPACH Study	Jain, Bellettiere, Glass, LaMonte, Di, Wild, Evenson, LaCroix	Gen	J Gerontol A Biol Sci Med Sci. 2021 Jan 1;76(1):77-84. doi: 10.1093/gerona/glaa227.	AS286



**Table 8.2**  
**Publications March 2020 - February 2021**

MS#	Title	Authors	Focus	Reference	Study #
3786	Smoking-by-genotype interaction in type 2 diabetes risk and fasting glucose	Wu, Franceschini, Kooperberg, Meigs, Liu		PLoS One. 2020 May 7;15(5):e0230815. doi: 10.1371/journal.pone.0230815. eCollection 2020.	BAA14, M13, M5
3841	Associations of depression status with plasma levels of candidate lipid and amino acid metabolites: a meta-analysis of individual data from three independent samples of US postmenopausal women	Huang, Hankinson, Kubzansky, Balasubramanian, Manson, Shadyab, Liu	Gen	Mol Psychiatry. 2020 Aug 28. doi: 10.1038/s41380-020-00870-9. Online ahead of print.	BAA24
3858	Do health behaviors mediate associations between personality traits and diabetes incidence?	Luo, Chen, Tindle, Shadyab, Saquib, Hale, Garcia, Springfield, Liu, Nassir, Snetselaar, Hendryx	Gen	Ann Epidemiol. 2020 Aug 14:S1047-2797(20)30288-X. doi: 10.1016/j.annepidem.2020.08.007. Online ahead of print.	
3861	Short physical performance battery and incident cardiovascular events among older women	Bellettiere, LaMonte, Unkart, Liles, Laddu-Patel, Manson, Banack, Seguin, Chavez, Tinker, Wallace, LaCroix		J Am Heart Assoc. 2020 Jul 14:e016845. doi: 10.1161/JAHA.120.016845. Online ahead of print	AS286
3866	Non-coding variants in MYH11, FZD3, and SORCS3 are associated with dementia in women	Blue, Thornton, Kooperberg, Liu, Wactawski-Wende, Manson, Kuller, Hayden, Reiner	Gen	Alzheimers Dement. 2020 Sep 23. doi: 10.1002/alz.12181. Online ahead of print.	AS564
3877	Diurnal patterns of sedentary behavior and changes in physical function over time among older women: a prospective cohort study	Reuter, Bellettiere, Liles, Di, Sears, LaMonte, Stefanick, LaCroix, Natarajan	Gen	Int J Behav Nutr Phys Act. 2020 Jul 9;17(1):88. doi: 10.1186/s12966-020-00992-x.	AS286
3881	Associations of coffee and tea consumption with survival to age 90 years among older women	Shadyab, Manson, Luo, Haring, Saquib, Snetselaar, Chen, Groessl, Wassertheil-Smoller, Sun, Hale, LeBoff, LaCroix	OS	J Am Geriatr Soc.2020 Apr 24. doi: 10.1111/jgs.16467. Online ahead of print.	
3886	Randomized trial evaluation of benefits and risks of menopausal hormone therapy among women aged 50-59	Prentice, Aragaki, Chlebowski, Rossouw, Anderson, Stefanick, Wactawski-Wende, Kuller, Wallace, Johnson, Shadyab, Gass, Manson	CT	Am J Epidemiol. 2020 Oct 7:kwaa210. doi: 10.1093/aje/kwaa210. Online ahead of print.	

**Table 8.2**  
**Publications March 2020 - February 2021**

MS#	Title	Authors	Focus	Reference	Study #
3893	Dietary cholesterol and egg intake in relation to incident cardiovascular disease and all-cause and cause-specific mortality in postmenopausal women	Chen, Chen, Mossavar-Rahmani, Kamensky, Shadyab, Haring, Wild, Silver, Kuller, Sun, Saquib, Howard, Snetselaar, Neuhouser, Allison, Van Horn, et al.	Gen	Am J Clin Nutr. 2020 Dec 17;nqaa353. doi: 10.1093/ajcn/nqaa353. Online ahead of print.	
3897	Associations between plasma choline metabolites and genetic polymorphisms in one-carbon metabolism in postmenopausal women: The Women's Health Initiative Observational Study	Ilozumba, Cheng, Neuhouser, Miller, Beresford, Duggan, Toriola, Song, Zheng, Bailey, Shadyab, Liu, Malysheva, Caudill, Ulrich	OS	J Nutr. 2020 Sep 16:nxaa266. doi: 10.1093/jn/nxaa266. Online ahead of print.	AS195
3900	Pre-diagnostic plasma lipid levels and the risk of amyotrophic lateral sclerosis	Bjornevik, O'Reilly, Furtado, Kolonel, Le Marchand, McCullough, Paganoni, Schwarzschild, Shadyab, Manson, Ascherio	Gen	Amyotroph Lateral Scler Frontotemporal Degener. 2020 Sep 28:1-11. doi: 10.1080/21678421.2020.1822411. Online ahead of print.	AS402
3925	Lipoprotein(a) levels and risk of abdominal aortic aneurysm in the Women's Health Initiative	Chou, Pettinger, Haring, Mell, Hlatky, Wactawski-Wende, Allison, Wild, Shadyab, Wallace, Snetselaar, Eagleton, Conrad, Liu	Gen	J Vasc Surg. 2020 Aug 31:S0741-5214(20)31908-X. doi: 10.1016/j.jvs.2020.07.106. Online ahead of print.	W35
3974	Can dietary self-reports usefully complement blood concentrations for estimation of micronutrient intake and chronic disease associations?	Prentice, Pettinger, Neuhouser, Tinker, Huang, Zheng, Manson, Mossavar-Rahmani, Anderson, Lampe	Gen	Am J Clin Nutr. 2020 Mar 4. pii: nqaa034. doi: 10.1093/ajcn/nqaa034. [Epub ahead of print]	AS498
3987	Functional informed genome-wide interaction analysis of body mass index, diabetes and colorectal cancer risk	Xia, Nan, Nassir, Qi, Albanes, Newcomb, Sakoda, Buchanan, Berndt, Peters	Gen	Cancer Med. 2020 Mar 24. doi: 10.1002/cam4.2971. [Epub ahead of print]	AS224
3998	Dietary manganese, plasma markers of inflammation, and the development of Type 2 Diabetes in postmenopausal women: Findings from the Women's Health Initiative	Gong, Lo, Liu, Li, Lai, Shadyab, Arcan, Snetselaar, Liu	Gen	Diabetes Care. 2020 Jun;43(6):1344-1351. doi: 10.2337/dc20-0243. Epub 2020 Apr 15.	AS132
4000	Mendelian randomization analysis with survival outcomes	Cho, Rau, Reiner, Auer	OS	Genet Epidemiol. 2020 Sep 12. doi: 10.1002/gepi.22354. Online ahead of print.	M18

**Table 8.2**  
**Publications March 2020 - February 2021**

MS#	Title	Authors	Focus	Reference	Study #
4074	Women's health initiative strong and healthy (WHISH) pragmatic physical activity intervention trial for cardiovascular disease prevention: Design and baseline characteristics	Stefanick, LaCroix, Kooperberg, King, Hlatky, Anderson	Gen	J Gerontol A Biol Sci Med Sci. 2021 Jan 12:glaa325. doi: 10.1093/gerona/glaa325. Online ahead of print.	AS360
4084	Outdoor air pollution exposure and inter-relation of global cognitive performance and emotional distress in older women	Petkus, Chen, Wang, Beavers, Chui, Espeland, Gatz, Gruenewald, Kaufman, Manson, Resnick, Wellenius, Whitsel, Widaman, Younan	WHIMS	Environ Pollut. 2020 Dec 14;271:116282. doi: 10.1016/j.envpol.2020.116282. Online ahead of print.	AS252
4110	Genome-wide association of kidney traits in Hispanics/Latinos using dense imputed whole genome sequencing data: The Hispanic Community Health Study/Study of Latinos	Qian, Kramer, Tao, Stilp, Cai, Li, Franceschini	Gen	Circ Genom Precis Med. 2020 Jun 29. doi: 10.1161/CIRCGEN.119.002891. Online ahead of print	AS564, M5
4144	Premature menopause, clonal hematopoiesis, and coronary artery disease in postmenopausal women	Honigberg, Zekavat, Niroula, Griffin, Bick, Pirruccello, Whitsel, Farland, Kooperberg, Manson, Reiner, Natarajan	Gen	Circulation. 2020 Nov 9. doi: 10.1161/CIRCULATIONAH.A.120.051775. Online ahead of print.	AS564
4173	Subgingival microbiome is associated with alveolar bone loss measured 5-years later in postmenopausal women	LaMonte, Andrews, Hovey, Li, McSkimming, Banack, Sun, Wactawski-Wende	Gen	J Periodontol. 2020 Nov 3. doi: 10.1002/JPER.20-0445. Online ahead of print	AS382
4216	Reticular pseudodrusen characteristics and associations in the carotenoids in age-related eye disease study 2 (CAREDS2)	Cleland, Domalpally, Liu, Tinker, Wallace, Mares, Blodi, Gehrs	Gen	Ophthalmol Retina. 2020 Dec 30:S2468-6530(20)30506-6. doi: 10.1016/j.oret.2020.12.019. Online ahead of print.	AS471
4227	Association of premature menopause with risk of abdominal aortic aneurysm in the Women's Health Initiative	Chou, Pettinger, Haring, Allison, Mell, Hlatky, Wactawski-Wende, Wild, Shadyab, Wallace, Snetelaar, Madsen, Eagleton, Conrad, Liu		Ann Surg. 2020 Nov 4. doi: 10.1097/SLA.0000000000004581. Online ahead of print.	

**Table 9.1**  
**WHI COVID-19 Survey Response Rates by Collection Mechanism**

	<b>Total Participants Contacted</b>	<b>Forms Received</b>	<b>Percent Received</b>
Form 190 (WHI COVID-19 Survey)			
Paper <sup>1</sup>	26888	19757	73.5%
Paper – REDCaP non-responders	20424	16877	82.6%
Phone	2899	567	19.6%
REDCaP	34398	13072	38.0%
Total	64185	50273	78.3%

<sup>1</sup> The paper mailing included participants who did not respond to the REDCaP email or who did not have a valid email address.

**Table 9.2**  
**Responses to First WHI COVID-19 Survey Overall and by Age at Survey Completion**  
 Data as of: November 1, 2020

	Overall (N=49,695)		Age at WHI COVID-19 Survey							
			70-79 (N=13,317)		80-84 (N=16,083)		85-89 (N=12,160)		≥90 (N=8,135)	
	N	%	N	%	N	%	N	%	N	%
Current level of well-being										
Excellent	4915	10.0	1804	13.6	1757	11.0	866	7.2	488	6.1
Very Good	19045	38.7	5766	43.5	6406	40.2	4335	36.1	2538	31.9
Good	18151	36.9	4279	32.3	5796	36.4	4814	40.1	3262	41.0
Fair	5967	12.1	1253	9.5	1716	10.8	1651	13.8	1347	16.9
Poor	901	1.8	138	1.0	232	1.5	271	2.3	260	3.3
Very Poor	171	0.3	17	0.1	35	0.2	55	0.5	64	0.8
Living arrangement changed since March 2020 due to pandemic	3351	6.9	684	5.2	904	5.7	912	7.7	851	10.8
If yes, what changed										
Moved in with other family or friends	356	13.1	74	12.3	90	12.0	91	12.9	101	15.1
Family or friends moved in	495	18.2	162	26.9	141	18.9	113	16.1	79	11.8
Household members moved away	148	5.4	43	7.1	40	5.3	38	5.4	27	4.0
Moved out of shared housing	62	2.3	17	2.8	13	1.7	15	2.1	17	2.5
Care provider now comes to help	190	7.0	12	2.0	46	6.1	46	6.5	86	12.9
Care provider no longer comes to help	92	3.4	8	1.3	21	2.8	19	2.7	44	6.6
Moved into care facility	233	8.6	12	2.0	47	6.3	62	8.8	112	16.8
Moved out of care facility	61	2.2	13	2.2	16	2.1	8	1.1	24	3.6
Other changes to living arrangement	1404	51.6	306	50.7	398	53.2	383	54.5	317	47.5
Number of people living in same household with you (including self)										
1	21065	43.7	4797	36.6	6686	42.6	5753	49.1	3829	49.9
2	18858	39.1	6662	50.8	6756	43.1	3764	32.1	1676	21.8
3	2806	5.8	732	5.6	824	5.3	700	6.0	550	7.2
4	911	1.9	238	1.8	293	1.9	241	2.1	139	1.8
5 or more	1207	2.5	283	2.2	317	2.0	278	2.4	329	4.3
Not applicable	3340	6.9	401	3.1	814	5.2	977	8.3	1148	15.0
Ever exposed to another person diagnosed or suspected of having COVID-19										
No, not that I know of	47137	96.2	12608	95.6	15298	96.3	11584	96.8	7647	96.3
Yes, someone outside of my home	1495	3.1	482	3.7	486	3.1	305	2.5	222	2.8
Yes, someone living with me	346	0.7	94	0.7	97	0.6	83	0.7	72	0.9
Tested for COVID-19										
No	39453	80.5	10766	81.5	12983	81.7	9660	80.8	6044	76.2
Yes	9241	18.9	2401	18.2	2841	17.9	2223	18.6	1776	22.4
Unsure	287	0.6	36	0.3	69	0.4	69	0.6	113	1.4

**Table 9.2 (continued)**  
**Responses to First WHI COVID-19 Survey Overall and by Age at Survey Completion**  
 Data as of: November 1, 2020

	Overall (N=49,695)		Age at WHI COVID-19 Survey							
			70-79 (N=13,317)		80-84 (N=16,083)		85-89 (N=12,160)		≥90 (N=8,135)	
	N	%	N	%	N	%	N	%	N	%
If tested, positive result										
No	8368	94.0	2180	93.2	2585	94.7	2017	94.3	1586	93.6
Yes	311	3.5	81	3.5	84	3.1	70	3.3	76	4.5
Unsure	223	2.5	78	3.3	62	2.3	51	2.4	32	1.9
Ever hospitalized for COVID-19										
No	214	71.6	64	80.0	50	63.3	50	73.5	50	69.4
Yes	81	27.1	13	16.3	29	36.7	17	25.0	22	30.6
Unsure	4	1.3	3	3.8	0	0.0	1	1.5	0	0.0
If hospitalized, number of nights										
1 night	1	1.3	0	0.0	0	0.0	0	0.0	1	4.8
2-3 nights	10	12.5	0	0.0	4	13.8	2	11.8	4	19.0
4-6 nights	29	36.3	9	69.1	8	27.6	5	29.4	7	33.3
7-13 nights	19	23.8	3	23.1	6	20.7	5	29.4	5	23.8
14 or more nights	20	25.0	1	7.7	11	37.9	4	23.5	4	19.0
Unsure	1	1.3	0	0.0	0	0.0	1	5.9	0	0.0
If hospitalized, received treatment in ICU	18	23.1	2	15.4	10	34.5	3	20.0	3	14.3
Had health care appointments scheduled from March 2020 till now										
No	9521	20.1	2479	19.1	2958	19.1	2301	20.0	1783	23.9
Yes	37683	79.4	10476	80.7	12466	80.5	9133	79.3	5608	75.1
Unsure	252	0.5	34	0.3	55	0.4	85	0.7	78	1.0
Health care appointment cancelled	10132	27.8	2928	28.6	3342	27.7	2342	26.7	1520	28.4
Health care appointment rescheduled	13735	37.7	4015	39.2	4695	38.9	3275	37.4	1750	32.6
Health care appointment converted to telephone or online	16543	45.4	4849	47.4	5488	45.5	3895	44.4	2311	43.1
No health care appointments changed	9355	25.7	2365	23.1	3051	25.3	2381	27.2	1558	29.1
Decided not to go to doctor or hospital to avoid COVID-19 exposure	11723	24.5	3427	26.2	3732	23.9	2687	23.1	1877	24.7
How much difficulty getting routine care since March 2020										
None	36377	75.5	9798	74.8	11853	75.7	8906	75.9	5820	75.5
Some	10549	21.9	2939	22.4	3430	21.9	2550	21.7	1630	21.1
Much	771	1.6	220	1.7	228	1.5	179	1.5	144	1.9
Unable or very difficult	496	1.0	136	1.0	146	0.9	98	0.8	116	1.5

**Table 9.2 (continued)**  
**Responses to First WHI COVID-19 Survey Overall and by Age at Survey Completion**  
 Data as of: November 1, 2020

	Overall (N=49,695)		Age at WHI COVID-19 Survey							
			70-79 (N=13,317)		80-84 (N=16,083)		85-89 (N=12,160)		≥90 (N=8,135)	
	N	%	N	%	N	%	N	%	N	%
How do you get prescriptions										
Myself at a local pharmacy	19090	50.0	6201	58.7	6855	54.8	4231	46.1	1803	30.4
Medications delivered	13550	35.5	3583	33.9	4302	34.4	3362	36.6	2303	38.8
Rely on others to get medications	3159	8.3	342	3.2	695	5.6	976	10.6	1146	19.3
Facility provides medications	1051	2.8	43	0.4	172	1.4	298	3.2	538	9.1
Other ways of getting medications	1328	3.5	396	3.7	478	3.8	315	3.4	139	2.3
Way of getting prescription medications changed since March 2020	3981	9.7	974	8.8	1265	9.5	1040	10.5	702	10.9
Difficulties taking medications since the pandemic started										
Delays getting prescriptions filled	1844	37.6	536	39.6	567	36.8	438	36.6	303	37.3
Delaying or not taking medications	374	7.6	103	7.6	92	6.0	101	8.4	78	9.6
No longer have someone to help me take medications	328	6.7	38	2.8	80	5.2	99	8.3	111	13.7
Having difficulty paying for medications	778	15.9	191	14.1	245	15.9	194	16.2	148	18.2
Having other difficulties with taking medications	1897	38.7	572	42.2	633	41.1	444	37.1	248	30.5
How concerned about the COVID-19 pandemic										
Not at all concerned	3245	6.8	686	5.2	942	6.0	809	6.9	808	10.6
Somewhat very concerned	20247	42.2	5281	40.4	6594	42.2	5048	43.2	3324	43.6
Very concerned	24533	51.1	7115	54.4	8092	51.8	5826	49.9	3500	45.9
Pandemic causing concerns about										
Risk of getting COVID-19 infection	30849	62.1	9163	68.8	10372	64.5	7174	59.0	4140	50.9
Family getting COVID-19 infection	33448	67.3	9611	72.2	11074	68.9	7889	64.9	4874	59.9
Getting healthcare	5714	11.5	1765	13.3	1804	11.2	1285	10.6	860	10.6
Getting adequate food	1375	2.8	425	3.2	410	2.5	332	2.7	208	2.6
Getting enough exercise	11587	23.3	3292	24.7	3879	24.1	2787	22.9	1629	20.0
Getting enough sleep	3813	7.7	1157	8.7	1261	7.8	895	7.4	500	6.1
Adequate housing	299	0.6	69	0.5	88	0.5	90	0.7	52	0.6
Having enough money	2380	4.8	715	5.4	718	4.5	580	4.8	367	4.5
Personal safety	8189	16.5	2489	18.7	2716	16.9	1907	15.7	1077	13.2
Health/safety of family/friends	29226	58.8	8090	60.7	9555	59.4	7106	58.4	4475	55.0
Financial security	3795	7.6	1206	9.1	1177	7.3	852	7.0	560	6.9
Financial security of family	5168	10.4	1605	12.1	1702	10.6	1198	9.9	663	8.1
Ability to be with family/friends	30533	61.4	8756	65.8	10102	62.8	7232	59.5	4443	54.6
Nation and economy	34561	69.5	9743	73.2	11372	70.7	8335	68.5	5111	62.8

**Table 9.2 (continued)**  
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 Data as of: November 1, 2020

	Overall (N=49,695)		Age at WHI COVID-19 Survey							
			70-79 (N=13,317)		80-84 (N=16,083)		85-89 (N=12,160)		≥90 (N=8,135)	
	N	%	N	%	N	%	N	%	N	%
Since March 2020, steps taken to reduce COVID-19 risk										
Washing hands frequently	45019	90.6	12582	94.5	14884	92.5	10871	89.4	6682	82.1
Not touching face	32157	64.7	9636	72.4	10821	67.3	7471	61.4	4229	52.0
Disinfecting surfaces frequently	25227	50.8	7658	57.5	8535	53.1	5828	47.9	3206	39.4
Physical distancing	44344	89.2	12537	94.1	14690	91.3	10607	87.2	6510	80.0
Wearing mask in public	46309	93.2	12810	96.2	15261	94.9	11223	92.3	7015	86.2
Wearing gloves in public	9517	19.2	3045	22.9	3248	20.2	2154	17.7	1070	13.2
Avoiding in-person activities	36786	74.0	10358	77.8	12132	75.4	8804	72.4	5492	67.5
Avoiding or limiting in-person shopping	34828	70.1	9599	72.1	11416	71.0	8496	69.9	5317	65.4
Avoiding shaking hands	40159	80.8	11580	87.0	13405	83.3	9532	78.4	5642	69.4
Staying home	39210	78.9	10472	78.6	12528	77.9	9642	79.3	6568	80.7
How often communicate with others outside your home										
Every day	22819	47.8	6559	50.4	7434	47.8	5415	46.8	3411	44.9
Several times per week	16043	33.6	4426	34.0	5436	35.0	3807	32.9	2374	31.3
1-2 times per week	5326	11.2	1333	10.2	1668	10.7	1401	12.1	924	12.2
Once per week	1945	4.1	422	3.2	581	3.7	518	4.5	424	5.6
Rarely or never	1607	3.4	283	2.2	426	2.7	438	3.8	460	6.1
Compared to months before outbreak, communication is										
More often than before	7483	15.7	2130	16.4	2535	16.3	1777	15.3	1041	13.7
About the same as before	27461	57.5	7212	55.4	8805	56.6	6815	58.8	4629	61.1
Less often than before	12791	26.8	3680	28.3	4211	27.1	2992	25.8	1908	25.2
How staying in touch with others not living with you										
Speaking in person	18911	39.0	5395	41.0	6301	39.9	4459	37.8	2756	35.4
By telephone	46896	96.7	12667	96.3	15328	97.1	11467	97.2	7434	95.5
By video calls	16013	33.0	5803	44.1	5416	34.3	3115	26.4	1679	21.6
By email	29706	61.2	9689	73.6	10547	66.8	6384	54.1	3086	39.6
By social media	15190	31.3	5555	42.2	5268	33.4	3054	25.9	1313	16.9
By postal mail	15700	32.4	3739	28.4	5038	31.9	4095	34.7	2828	36.3
Other method	3645	7.5	1230	9.3	1245	7.9	758	6.4	412	5.3



**Table 9.2 (continued)**  
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 Data as of: November 1, 2020

	Overall (N=49,695)		Age at WHI COVID-19 Survey							
			70-79 (N=13,317)		80-84 (N=16,083)		85-89 (N=12,160)		≥90 (N=8,135)	
	N	%	N	%	N	%	N	%	N	%
Over the past month, level of physical activity since COVID-19 pandemic began										
Much less	12568	25.7	3232	24.5	4079	25.7	3160	26.5	2097	26.5
Somewhat less	14051	28.7	3783	28.7	4705	29.6	3425	28.7	2138	27.0
About the same	18233	37.3	4541	34.4	5748	36.2	4591	38.5	3353	42.3
Somewhat more	3226	6.6	1290	9.8	1076	6.8	588	4.9	272	3.4
Much more	852	1.7	352	2.7	274	1.7	165	1.4	61	0.8